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Project/Task WAG 7 Data Compilation
Subtask Water and Soils Sampling Data

EDF Page 1 of 156

TITLE: SDA Soil, Basalt, and Water Concentration Data Compilation: Radionuclides and Inorganics

SUMMARY:

This EDF summarizes available information for the Subsurface Disposal Area on radionuclide and inorganic concentrations in soil, basalt, and subsurface water. Data sources include published reports, letter reports, and environmental data bases. The compiled information will be useful in model calibration for the WAG 7 Pits and Trenches RI/FS.

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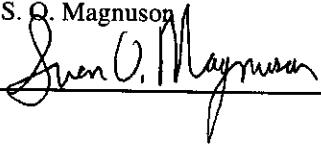
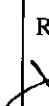
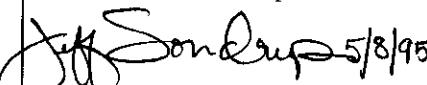
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SDA Soil, Basalt, and Water Concentration Data Compilation: Radionuclides and Inorganics

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May 5, 1995

1. Introduction

This Engineering Design File (EDF) compiles available water and soil concentrations for radionuclide and inorganic constituents in and in the vicinity of the Subsurface Disposal Area (SDA). The compiled data can then potentially be used in the Waste Area Group (WAG) 7 Comprehensive Pits, Trenches, and Soil Vaults Baseline Risk Assessment (BRA). The data will be used to calibrate numerical models of flow and transport so that simulations will in part mimic actual observed contaminant migration. This compilation does not represent a complete compilation of every nuclide or inorganic ever detected at the SDA. Rather, it focuses on eight radionuclides and six inorganic constituents that could be potentially used in model calibration. The eight radionuclides are: Am-241, C-14, Co-60, Cs-137, I-129, Pu-238, Pu-239/240, Sr-90, and Tc-99. The inorganics are cadmium, chloride, lead, magnesium, mercury, and nitrate..

Multiple data sources were used for this compilation and are referenced as they are used. Several databases were also used which causes some overlap in the samples reported in this EDF. While an attempt was made to limit redundancy, it was deemed more important to include all samples possible at the possible expense of occasionally reporting the same sample more than once.

Data validation levels are reported where they are known and available. Concentrations from referenced reports generally did not have a validation level.

Positive detections for purposes of calibration modeling will be defined as those concentrations that are greater than twice the sample uncertainty. This represents a confidence level of 2 sigma, or 95%, that the contaminant was detected. In some of the references, the only sample results that were presented were those with concentrations greater than three times the uncertainty. Had those reports included samples with concentrations greater than two times the uncertainty there may have been more detections. This causes an inconsistency in the sample values that can be gleaned from the available reports but it is not thought to be overly important. While there are some possible indications of contaminant movement in the vadose zone it has only resulted in low concentration levels, in some cases barely detectable. Non-detect sampling events are also presented where they are available for completeness.

Radionuclide concentrations will be presented first followed by those for inorganics. Radionuclide concentrations are presented first for water and then soil. Tables are generally presented for each data source or combination of similar sources. For the radionuclide concentrations in water, three tables are presented next. They are for soil water in the vadose zone, perched water in the

vadose zone, and then for the aquifer. The reference for each sample is supplied in the table and refer to the complete reference list following the third table.

2. Radionuclide Water Concentration Data

2.1 Surface Soil Lysimeter Water Samples

These samples come exclusively from the RWMC Subsurface Investigation Program (SIP). The samples are presented with one-sigma uncertainty levels. Non-detects are also presented for FY-1986 and FY-1987. Negative concentrations result from subtracting out laboratory background radioactivity and represent non-detects. References are given in a list after Table 3.

Table 1: SIP Lysimeter Soil Water Radionuclide Sample Data

nuclide	Concentration	Well and Lysimeter	Depth	Date	Ref.
H-3	-3 +/- 2 ($\times 10^{-3}$) pCi/ml	W02/L01	14 ft	FY-1986	C
H-3	0.4 +/- 0.2 pCi/ml	W04/L03	24.5 ft	FY-1986	C
H-3	0.4 +/- 0.2 pCi/ml	W04/L05	6 ft	FY-1986	C
H-3	-7 +/- 4 ($\times 10^{-2}$) pCi/ml	W08/L12	22 ft	FY-1986	C
H-3	0.5 +/- 0.3 pCi/ml	W08/L13	11.5 ft	FY-1986	C
H-3	8 +/- 6 ($\times 10^{-2}$) pCi/ml	W08/L14	6 ft	FY-1986	C
H-3	1.96 +/- 0.08 pCi/ml	W23/L08	12 ft	FY-1986	C
H-3	1.1 +/- 0.3 pCi/ml	W23/L09	7.5 ft	FY-1986	C
H-3	0.4 +/- 0.2 pCi/ml	PA01/L15	14.5 ft	FY-1986	C
H-3	-6 +/- 4 ($\times 10^{-3}$) pCi/ml	PA02/L16	8.5 ft	FY-1986	C
Pu-239/240	7 +/- 5 ($\times 10^{-5}$) pCi/ml	PA01/L15	14.5 ft	6/13/86	V
Pu-239/240	2 +/- 3 ($\times 10^{-5}$) pCi/ml	W04/L15	6 ft	6/13/86	V
Pu-239/240	1 +/- 4 ($\times 10^{-5}$) pCi/ml	W25/L28	15.5 ft	5/1/87	V
Pu-239/240	1 +/- 3 ($\times 10^{-5}$) pCi/ml	W06/L27	12 ft	5/1/85	V
Pu-239/240	2 +/- 3 ($\times 10^{-5}$) pCi/ml	PA02/L16	8.5 ft	6/13/86	V
Pu-239/240	8 +/- 7 ($\times 10^{-5}$) pCi/ml	PA01/L15	14.5 ft	4/30/87	V

Table 1: SIP Lysimeter Soil Water Radionuclide Sample Data

nuclide	Concentration	Well and Lysimeter	Depth	Date	Ref.
Pu-239/240	2 +/- 4 ($\times 10^{-5}$) pCi/ml	W23/L09	7.5 ft	6/13/86	V
Pu-239/240	5 +/- 4 ($\times 10^{-5}$) pCi/ml	W04/L04	15.5 ft	9/4/86	V
Pu-239/240	4 +/- 7 ($\times 10^{-5}$) pCi/ml	TH4/L18	4 ft	6/13/86	V
Pu-239/240	6 +/- 6 ($\times 10^{-5}$) pCi/ml	W23/L08	11 ft	5/01/87	V
Pu-239/240	4 +/- 7 ($\times 10^{-5}$) pCi/ml	W05/L25	10 ft	4/30/87	V
Pu-239/240	2 +/- 3 ($\times 10^{-5}$) pCi/ml	W02/L01	14 ft	4/30/87	V
Pu-238 and/or Am-241	6 +/- 5 ($\times 10^{-5}$) pCi/ml	PA01/L15	14.5 ft	6/13/86	V
Pu-238 and/or Am-241	2 +/- 3 ($\times 10^{-5}$) pCi/ml	W04/L15	6 ft	6/13/86	V
Pu-238 and/or Am-241	2 +/- 3 ($\times 10^{-5}$) pCi/ml	W25/L28	15.5 ft	5/1/87	V
Pu-238 and/or Am-241	1 +/- 3 ($\times 10^{-5}$) pCi/ml	W06/L27	12 ft	5/1/85	V
Pu-238 and/or Am-241	1.3 +/- 0.6 ($\times 10^{-4}$) pCi/ml	PA02/L16	8.5 ft	6/13/86	V
Pu-238 and/or Am-241	5 +/- 7 ($\times 10^{-5}$) pCi/ml	PA01/L15	14.5 ft	4/30/87	V
Pu-238 and/or Am-241	5 +/- 7 ($\times 10^{-5}$) pCi/ml	W23/L09	7.5 ft	6/13/86	V
Pu-238 and/or Am-241	7 +/- 6 ($\times 10^{-5}$) pCi/ml	W04/L04	15.5 ft	9/4/86	V
Pu-238 and/or Am-241	1.3 +/- 1.3 ($\times 10^{-4}$) pCi/ml	TH4/L18	4 ft	6/13/86	V
Pu-238 and/or Am-241	5.3 +/- 1.3 ($\times 10^{-4}$) pCi/ml	W23/L08	11 ft	5/01/87	V
Pu-238 and/or Am-241	1.6 +/- 1.2 ($\times 10^{-4}$) pCi/ml	W05/L25	10 ft	4/30/87	V
Pu-238 and/or Am-241	7 +/- 5 ($\times 10^{-5}$) pCi/ml	W02/L01	14 ft	4/30/87	V

Table 1: SIP Lysimeter Soil Water Radionuclide Sample Data

nuclide	Concentration	Well and Lysimeter	Depth	Date	Ref.
Sr-90	1.19 +/- 0.12 ($\times 10^{-2}$) pCi/ml	W23/L09	7.5 ft	FY-87	W

2.2 Perched Water Samples

There are several sources for perched water sample data on radionuclide concentrations. The primary one is USGS sampling of Well 92 inside the SDA. Most of the values in the following table are taken from the RWMC Environmental Surveillance report series. Several values are taken from Hubbell, 1990. Also, other sampling has been done sporadically. Other than Well 92, there is no regularly-scheduled sampling of perched water beneath the RWMC. Some non-detect samples are supplied in the following table. Samples are presented with a one-sigma variation, unless otherwise noted. There are some inconsistencies in the table between positive detects at the two-sigma level and what is presented in the RWMC Environmental Surveillance report series which is thought to have used only samples with a three-sigma level of confidence for some time periods. The reference column indices refer to the list after Table 3. All recorded radionuclide samples that could be found were included in Table 2 [as opposed to Table 3 which only contains selected nuclides].

Table 2: Perched Water Radionuclide Sample Data

nuclide	Concentration	Well	Depth	Date	Ref.
Cs-137	6 +/- 1 ($\times 10^{-2}$) pCi/ml	92	212 ft	9/18/72	D
Co-60	9 +/- 1 ($\times 10^{-2}$) pCi/ml	92	212 ft	9/18/72	D
Cs-137	0.2 +/- 0.01 pCi/ml	92	212 ft	11/20/72	D
Pu-238	2.5 +/- 0.8 ($\times 10^{-5}$) pCi/ml	92	212 ft	5/29/74	D
Pu-239/240	2.3 +/- 0.8 ($\times 10^{-5}$) pCi/ml	92	212 ft	5/29/74	D
Pu-238	4 +/- 2 ($\times 10^{-5}$) pCi/ml	92	212 ft	3/3/76	D
Pu-239/240	2.5 +/- 0.9 ($\times 10^{-5}$) pCi/ml	92	212 ft	3/3/76	D
Sr-90	non-detect	92	212 ft	3/3/76	M
Sr-90	0.2 +/- 0.1 ($\times 10^{-1}$) pCi/ml	92	212 ft	3/3/76	D
Pu-239/240	0.25 +/- 0.09 ¹ ($\times 10^{-4}$) pCi/ml	92	212 ft	3/3/76	M
Co-60	8 +/- 4 ($\times 10^{-3}$) pCi/ml	92	212 ft	3/3/76	D
H-3	non-detect	92	212 ft	3/3/76	M

Table 2: Perched Water Radionuclide Sample Data

nuclide	Concentration	Well	Depth	Date	Ref.
-	no detectable radionuclides	92	212 ft	10/29/76	M
Am-241	0.41 +/- 0.12(x10 ⁻⁶) pCi/ml	92	212 ft	10/29/76	D
Sr-90	0.8 +/- 0.4 (x10 ⁻²) pCi/ml	92	212 ft	10/29/76	D
H-3	5.4 +/- 0.1 pCi/ml	77-2	80-90 ft	3/14/77	A
H-3	18.0 +/- 1.0 pCi/ml	77-2	80-90 ft	3/21/77	A
-	no detectable radionuclides	92	212 ft	1977	N
Pu-238	6.3 +/- 0.6 (x10 ⁻⁵) pCi/ml	92	212 ft	5/2/77	D
-	no detectable radionuclides	92	212 ft	1978	O
-	no detectable radionuclides	92	212 ft	1979	P
H-3	0.4 +/- 0.2 pCi/ml	92	212 ft	4/21/80	D
Sr-90	0.9 +/- 0.2 (x10 ⁻²) pCi/ml	92	212 ft	4/21/80	Q,D
-	no detectable radionuclides	92	212 ft	1981	R
Am-241	7 +/- 3 (x10 ⁻⁵) pCi/ml	92	212 ft	10/8/81	D
-	no detectable radionuclides	92	212 ft	1982	S
-	no detectable radionuclides	92	212 ft	1983	T
H-3	0.9 +/- 0.4 pCi/ml	92	212 ft	10/23/84	D
-	no detectable radionuclides	92	212 ft	1985	E
-	no detectable radionuclides	92	212 ft	1986	F
-	no detectable radionuclides	92	212 ft	1987	G
-	no detectable radionuclides	92	212 ft	1988	H
-	no detectable radionuclides	92	212 ft	1989	I
-	no samples collected	92	212 ft	1990	J
H-3	0.83 +/- 0.01 pCi/ml	77-2	80-90	3/22/90	D
H-3	0.30 +/- 0.08 pCi/ml	78-1	80-90 ft	7/16/90	D
H-3	0.21 +/- 0.06 pCi/ml	89-01	92-240 ft	6/90	B
-	no detectable radionuclides	92	212 ft	1991	K

Table 2: Perched Water Radionuclide Sample Data

nuclide	Concentration	Well	Depth	Date	Ref.
Ce-144	3.8 +/- 1.8 ($\times 10^{-2}$) pCi/ml	D10	? ft	8/12/92	X
H-3	0.4 +/- 0.2 pCi/ml	92	212 ft	7/92	L

¹ Analytical results are +/- 2 sigma

2.3 Aquifer Water Samples

The primary source for water sample radionuclide results from the aquifer are from water samples taken from USGS monitoring wells in the vicinity of the RWMC. These are reported on an irregular basis in USGS Open File reports. The results are also reported more regularly in the RWMC Environmental Surveillance reports beginning in 1976. This latter source is utilized in Table 3. There are also aquifer radionuclide sampling results contained in two data bases which are presented later in this EDF. In Table 3, non-detect events are not included, only reported values from the RWMC Environmental Surveillance Reports (and their later variants) are presented. The sample results are presented in chronological order and references for each sample supplied. After 1979 only non-naturally occurring radionuclides were reported. Some positive detections are discounted in the text associated with the original tables or in footnotes as false positives. On a statistical basis, with a 2-sigma or 95% confidence level that a sample is detected, one out of 40 samples (2.5%) will yield false positives. Samples for which this is believed to have occurred are noted as such in the following table.

Table 3: RWMC Environmental Surveillance Aquifer Radionuclide Sample Data

nuclide	Concentration	Well	Date	Ref
Am-241	0.3 +/- 0.1 ^{1,2} ($\times 10^{-4}$) pCi/ml	unidentified	1976	M
Cs-137	2.4 +/- 0.7 ^{1,2} ($\times 10^{-2}$) pCi/ml	unidentified	1976	M
Fe-59	2.1 +/- 0.7 ^{1,2} ($\times 10^{-2}$) pCi/ml	unidentified	1976	M
Cs-137	1.6 +/- 0.7 ^{1,2} ($\times 10^{-2}$) pCi/ml	unidentified	1977	N
Mn-54	1.9 +/- 0.7 ^{1,2} ($\times 10^{-2}$) pCi/ml	unidentified	1977	N
Mn-54	1.8 +/- 0.7 ^{1,2} ($\times 10^{-2}$) pCi/ml	unidentified	1977	N
H-3	1.4 +/- 0.4 ¹ pCi/ml	RWMC	1/19/78	O
H-3	1.9 +/- 0.4 ¹ pCi/ml	RWMC	5/11/78	O
Pb-212	5.3 +/- 2.6 ^{1,3} ($\times 10^{-2}$) pCi/ml	RWMC	5/11/78	O

Table 3: RWMC Environmental Surveillance Aquifer Radionuclide Sample Data

nuclide	Concentration	Well	Date	Ref
H-3	1.8 +/- 0.4 ¹ pCi/ml	RWMC	7/18/78	O
H-3	0.6 +/- 0.4 ¹ pCi/ml	87	4/26/78	O
Pb-214	9.0 +/- 3.2 ^{1,3} (x10 ⁻²) pCi/ml	87	4.26/78	O
H-3	0.8 +/- 0.4 ¹ pCi/ml	87	7/26/78	O
H-3	1.1 +/- 0.4 ¹ pCi/ml	87	10/25/78	O
Pb-214	5.9 +/- 3.2 ^{1,3} (x10 ⁻²) pCi/ml	89	4/26/78	O
H-3	1.5 +/- 0.4 ¹ pCi/ml	90	4/25/78	O
Sr-90	5.0 +/- 4.0 ^{1,2} (x10 ⁻³) pCi/ml	90	4/25/78	O
Pb-214	4.5 +/- 3.2 ^{1,3} (x10 ⁻²) pCi/ml	90	4/25/78	O
Tl-208	7.3 +/- 3.8 ^{1,3} (x10 ⁻²) pCi/ml	90	4/25/78	O
H-3	2.0 +/- 0.4 ¹ pCi/ml	90	7/26/78	O
H-3	2.0 +/- 0.4 ¹ pCi/ml	90	10/25/78	O
H-3	1.1 +/- 0.4 ¹ pCi/ml	RWMC	1/79	P
H-3	1.9 +/- 0.4 ¹ pCi/ml	RWMC	4/79	P
H-3	1.4 +/- 0.4 ¹ pCi/ml	RWMC	7/79	P
H-3	2.3 +/- 0.4 ¹ pCi/ml	RWMC	10/79	P
Ac-228	0.22 +/- 0.17 ^{1,3} pCi/ml	RWMC	10/79	P
H-3	0.6 +/- 0.4 ¹ pCi/ml	87	5/79	P
H-3	0.6 +/- 0.4 ¹ pCi/ml	87	10/79	P
K-40	0.6 +/- 0.5 ^{1,3} pCi/ml	87	10/79	P
Sr-90	6.0 +/- 4.0 ^{1,2} (x10 ⁻³) pCi/ml	88	7/79	P
Pb-212	9.5 +/- 7.4 ^{1,3} (x10 ⁻²) pCi/ml	89	5/79	P
H-3	0.8 +/- 0.4 ¹ pCi/ml	90	1/79	P

Table 3: RWMC Environmental Surveillance Aquifer Radionuclide Sample Data

nuclide	Concentration	Well	Date	Ref
H-3	1.9 +/- 0.4 ¹ pCi/ml	90	5/79	P
Pb-214	0.16 +/- 0.13 ^{1,3} pCi/ml	90	5/79	P
H-3	2.1 +/- 0.4 ¹ pCi/ml	90	7/79	P
H-3	1.8 +/- 0.4 ¹ pCi/ml	90	10/79	P
H-3	0.6 +/- 0.4 ¹ pCi/ml	87	1/80	Q
H-3	1.0 +/- 0.4 ¹ pCi/ml	87	4/80	Q
H-3	1.1 +/- 0.4 ¹ pCi/ml	87	7/80	Q
H-3	1.2 +/- 0.4 ¹ pCi/ml	87	10/80	Q
Cs-137	1.8 +/- 1.3 ^{1,2} ($\times 10^{-2}$) pCi/ml	87	10/80	Q
Co-60	1.1 +/- 1.0 ^{1,2} ($\times 10^{-2}$) pCi/ml	88	10/80	Q
H-3	1.5 +/- 0.4 ¹ pCi/ml	90	1/80	Q
H-3	1.6 +/- 0.4 ¹ pCi/ml	90	4/80	Q
H-3	1.5 +/- 0.4 ¹ pCi/ml	90	7/80	Q
H-3	1.9 +/- 0.4 ¹ pCi/ml	90	10/80	Q
H-3	0.8 +/- 0.4 ¹ pCi/ml	87	1/81	R
H-3	0.8 +/- 0.4 ¹ pCi/ml	87	4/81	R
H-3	1.0 +/- 0.4 ¹ pCi/ml	87	7/81	R
H-3	0.8 +/- 0.4 ¹ pCi/ml	87	10/81	R
H-3	1.6 +/- 0.4 ¹ pCi/ml	90	1/81	R
H-3	1.8 +/- 0.4 ¹ pCi/ml	90	4/81	R
Pu-238	1.0 +/- 0.8 ¹ ($\times 10^{-4}$) pCi/ml	90	4/81	R
Am-241	2.0 +/- 1.0 ¹ ($\times 10^{-4}$) pCi/ml	90	4/81	R
H-3	1.7 +/- 0.4 ¹ pCi/ml	90	7/81	R

Table 3: RWMC Environmental Surveillance Aquifer Radionuclide Sample Data

nuclide	Concentration	Well	Date	Ref
H-3	1.7 +/- 0.4 ¹ pCi/ml	90	10/81	R
Am-241	1.0 +/- 0.8 ¹ (x10 ⁻⁴) pCi/ml	90	10/81	R
H-3	1.6 +/- 0.4 ¹ pCi/ml	RWMC	1/81	R
H-3	1.4 +/- 0.4 ¹ pCi/ml	RWMC	4/81	R
H-3	2.3 +/- 0.4 ¹ pCi/ml	RWMC	10/81	R
H-3	0.6 +/- 0.4 ¹ pCi/ml	87	1/82	S
H-3	1.1 +/- 0.4 ¹ pCi/ml	87	4/82	S
H-3	0.6 +/- 0.4 ¹ pCi/ml	87	7/82	S
H-3	0.6 +/- 0.4 ¹ pCi/ml	87	10/82	S
Am-241	0.2 +/- 0.1 ¹ (x10 ⁻⁴) pCi/ml	88	7/82	S
H-3	1.5 +/- 0.4 ¹ pCi/ml	90	1/82	S
H-3	1.5 +/- 0.4 ¹ pCi/ml	90	4/82	S
H-3	1.1 +/- 0.4 ¹ pCi/ml	90	7/82	S
H-3	1.8 +/- 0.4 ¹ pCi/ml	90	10/82	S
H-3	1.5 +/- 0.4 ¹ pCi/ml	RWMC	1/82	S
H-3	2.3 +/- 0.4 ¹ pCi/ml	RWMC	4/82	S
H-3	1.1 +/- 0.4 ¹ pCi/ml	RWMC	7/82	S
H-3	1.8 +/- 0.4 ¹ pCi/ml	RWMC	10/82	S
H-3	1.1 +/- 0.2 pCi/ml	87	1/83	T
H-3	0.6 +/- 0.2 pCi/ml	87	7/83	T
H-3	0.6 +/- 0.2 pCi/ml	87	10/83	T
Pu-238	8.1 +/- 0.8 (x10 ⁻⁴) pCi/ml	88	4/83	T
Ce-141	1.8 +/- 0.75 (x10 ⁻¹) pCi/ml	89	4/83	T

Table 3: RWMC Environmental Surveillance Aquifer Radionuclide Sample Data

nuclide	Concentration	Well	Date	Ref
H-3	2.0 +/- 0.2 pCi/ml	90	1/83	T
H-3	0.6 +/- 0.2 pCi/ml	90	4/83	T
H-3	1.3 +/- 0.2 pCi/ml	90	7/83	T
H-3	1.8 +/- 0.2 pCi/ml	90	10/83	T
H-3	2.0 +/- 0.2 pCi/ml	RWMC	1/83	T
H-3	1.4 +/- 0.2 pCi/ml	RWMC	4/83	T
H-3	1.3 +/- 0.2 pCi/ml	RWMC	7/83	T
H-3	1.6 +/- 0.2 pCi/ml	RWMC	10/83	T
H-3	1.4 +/- 0.3 pCi/ml	87	1/84	U
H-3	1.4 +/- 0.3 pCi/ml	87	4/84	U
H-3	1.3 +/- 0.3 pCi/ml	87	7/84	U
H-3	1.4 +/- 0.3 pCi/ml	87	10/84	U
H-3	2.1 +/- 0.3 pCi/ml	90	1/84	U
H-3	1.9 +/- 0.3 pCi/ml	90	4/84	U
H-3	1.5 +/- 0.3 pCi/ml	90	7/84	U
H-3	1.2 +/- 0.3 pCi/ml	90	10/84	U
H-3	1.8 +/- 0.3 pCi/ml	RWMC	1/84	U
H-3	1.5 +/- 0.4 pCi/ml	RWMC	4/84	U
H-3	2.1 +/- 0.3 pCi/ml	RWMC	7/84	U
H-3	1.7 +/- 0.3 pCi/ml	RWMC	10/84	U
Am-241	1.5 +/- 0.6 ($\times 10^{-5}$) pCi/ml	RWMC	10/84	U
H-3	0.8 +/- 0.3 pCi/ml	87	1/85	E
H-3	1.2 +/- 0.3 pCi/ml	87	4/85	E
H-3	0.8 +/- 0.3 pCi/ml	87	7/85	E
Sr-90	6.0 +/- 2.0 ($\times 10^{-3}$) pCi/ml	87	10/85	E
H-3	1.6 +/- 0.3 pCi/ml	90	1/85	E

Table 3: RWMC Environmental Surveillance Aquifer Radionuclide Sample Data

nuclide	Concentration	Well	Date	Ref
H-3	1.8 +/- 0.3 pCi/ml	RWMC	1/85	E
H-3	1.9 +/- 0.4 pCi/ml	RWMC	4/85	E
H-3	1.5 +/- 0.3 pCi/ml	RWMC	7/85	E
H-3	1.4 +/- 0.3 pCi/ml	RWMC	10/85	E
H-3	1.3 +/- 0.3 pCi/ml	87	1/86	F
H-3	1.0 +/- 0.3 pCi/ml	87	4/86	F
Cs-137	9.0 +/- 3.0 ($\times 10^{-2}$) pCi/ml	87	4/86	F
H-3	1.1 +/- 0.4 pCi/ml	87	8/86	F
H-3	0.9 +/- 0.3 pCi/ml	87	11/86	F
Sr-90	6.0 +/- 2.0 ($\times 10^{-3}$) pCi/ml	87	11/86	F
H-3	0.9 +/- 0.3 pCi/ml	88	1/86	F
H-3	2.1 +/- 0.4 pCi/ml	90	1/86	F
H-3	1.5 +/- 0.3 pCi/ml	90	4/86	F
H-3	1.8 +/- 0.4 pCi/ml	90	8/86	F
H-3	1.2 +/- 0.4 pCi/ml	90	11/86	F
H-3	2.2 +/- 0.4 pCi/ml	RWMC	1/86	F
H-3	1.9 +/- 0.4 pCi/ml	RWMC	4/86	F
H-3	1.9 +/- 0.4 pCi/ml	RWMC	8/86	F
H-3	1.9 +/- 0.4 pCi/ml	RWMC	11/86	F
H-3	1.3 +/- 0.3 pCi/ml	87	1/87	G
H-3	0.9 +/- 0.3 pCi/ml	87	4/87	G
H-3	1.1 +/- 0.3 pCi/ml	87	7/87	G
Sr-90	2.2 +/- 0.3 ($\times 10^{-2}$) pCi/ml	87	7/87	G
Sr-90	2.3 +/- 0.3 ($\times 10^{-2}$) pCi/ml	87	9/23/87	G
H-3	0.9 +/- 0.3 pCi/ml	87	9/30/87	G
Sr-90	0.7 +/- 0.15 ($\times 10^{-2}$) pCi/ml	87	9/30/87	G

Table 3: RWMC Environmental Surveillance Aquifer Radionuclide Sample Data

nuclide	Concentration	Well	Date	Ref
H-3	1.4 +/- 0.4 pCi/ml	90	1/87	G
H-3	1.6 +/- 0.3 pCi/ml	90	4/87	G
H-3	1.6 +/- 0.3 pCi/ml	90	8/87	G
H-3	1.3 +/- 0.3 pCi/ml	90	9/23/87	G
H-3	1.4 +/- 0.3 pCi/ml	90	9/30/87	G
H-3	1.5 +/- 0.4 pCi/ml	RWMC	1/87	G
H-3	1.9 +/- 0.4 pCi/ml	RWMC	4/87	G
H-3	1.7 +/- 0.3 pCi/ml	RWMC	8/87	G
Sr-90	0.6 +/- 0.2 ($\times 10^{-2}$) pCi/ml	RWMC	8/87	G
H-3	1.5 +/- 0.3 pCi/ml	RWMC	9/87	G
H-3	1.9 +/- 0.4 pCi/ml	RWMC	10/87	G
H-3	0.7 +/- 0.3 pCi/ml	87	1/88	H
H-3	0.9 +/- 0.3 pCi/ml	87	4/88	H
H-3	1.0 +/- 0.2 pCi/ml	87	8/88	H
H-3	1.2 +/- 0.2 pCi/ml	87	10/88	H
H-3	1.4 +/- 0.4 pCi/ml	90	2/88	H
H-3	2.1 +/- 0.3 pCi/ml	90	4/88	H
H-3	1.7 +/- 0.2 pCi/ml	90	6/88	H
H-3	1.9 +/- 0.2 pCi/ml	90	10/88	H
H-3	1.5 +/- 0.4 pCi/ml	RWMC	1/88	H
H-3	1.9 +/- 0.4 pCi/ml	RWMC	4/88	H
H-3	2.5 +/- 0.4 pCi/ml	RWMC	6/88	H
H-3	2.4 +/- 0.4 pCi/ml	RWMC	7/88	H
H-3	2.2 +/- 0.4 pCi/ml	RWMC	8/88	H
H-3	2.7 +/- 0.4 pCi/ml	RWMC	9/88	H
H-3	1.8 +/- 0.3 pCi/ml	RWMC	10/88	H

Table 3: RWMC Environmental Surveillance Aquifer Radionuclide Sample Data

nuclide	Concentration	Well	Date	Ref
H-3	1.7 +/- 0.2 pCi/ml	RWMC	11/88	H
H-3	2.3 +/- 0.4 pCi/ml	RWMC	12/88	H
H-3	1.2 +/- 0.2 pCi/ml	87	1/89	I
H-3	1.2 +/- 0.2 pCi/ml	87	4/89	I
H-3	1.0 +/- 0.2 pCi/ml	87	8/89	I
H-3	1.0 +/- 0.2 pCi/ml	87	10/89	I
H-3	1.6 +/- 0.2 pCi/ml	90	2/89	I
H-3	1.6 +/- 0.2 pCi/ml	90	4/89	I
H-3	1.5 +/- 0.2 pCi/ml	90	6/89	I
H-3	1.5 +/- 0.2 pCi/ml	90	10/89	I
H-3	1.7 +/- 0.2 pCi/ml	RWMC	1/89	I
H-3	1.7 +/- 0.2 pCi/ml	RWMC	3/89	I
H-3	1.7 +/- 0.2 pCi/ml	RWMC	7/89	I
H-3	1.5 +/- 0.2 pCi/ml	RWMC	10/89	I
H-3	1.0 +/- 0.2 pCi/ml	87	1/90	J
H-3	1.1 +/- 0.2 pCi/ml	87	4/90	J
H-3	1.2 +/- 0.2 pCi/ml	87	7/90	J
H-3	1.0 +/- 0.2 pCi/ml	87	10/90	J
H-3	1.3 +/- 0.2 pCi/ml	90	2/90	J
H-3	1.7 +/- 0.2 pCi/ml	90	4/90	J
H-3	1.3 +/- 0.2 pCi/ml	90	6/90	J
H-3	1.8 +/- 0.2 pCi/ml	90	10/90	J
H-3	1.6 +/- 0.2 pCi/ml	RWMC	1/90	J
H-3	1.9 +/- 0.2 pCi/ml	RWMC	3/90	J
H-3	1.8 +/- 0.2 pCi/ml	RWMC	7/90	J
H-3	1.7 +/- 0.2 pCi/ml	RWMC	10/90	J

Table 3: RWMC Environmental Surveillance Aquifer Radionuclide Sample Data

nuclide	Concentration	Well	Date	Ref
H-3	1.2 +/- 0.2 pCi/ml	87	1/91	K
H-3	1.4 +/- 0.2 pCi/ml	87	4/91	K
H-3	1.1 +/- 0.2 pCi/ml	87	7/91	K
H-3	1.2 +/- 0.2 pCi/ml	87	10/91	K
H-3	1.4 +/- 0.2 pCi/ml	90	1/91	K
H-3	1.6 +/- 0.2 pCi/ml	90	4/91	K
H-3	1.6 +/- 0.2 pCi/ml	90	6/91	K
H-3	1.6 +/- 0.2 pCi/ml	90	10/91	K
H-3	1.5 +/- 0.2 pCi/ml	RWMC	1/91	K
H-3	1.7 +/- 0.2 pCi/ml	RWMC	4/91	K
H-3	1.6 +/- 0.2 pCi/ml	RWMC	7/91	K
H-3	1.5 +/- 0.2 pCi/ml	RWMC	10/91	K
H-3	0.9 +/- 0.2 pCi/ml	87	1/92	L
H-3	1.0 +/- 0.2 pCi/ml	87	4/92	L
H-3	1.5 +/- 0.2 pCi/ml	90	1/92	L
H-3	1.4 +/- 0.2 pCi/ml	90	4/92	L
H-3	1.4 +/- 0.2 pCi/ml	RWMC	1/92	L
H-3	1.4 +/- 0.2 pCi/ml	RWMC	4/92	L
H-3	1.6 +/- 0.2 pCi/ml	RWMC	7/92	L

¹ Analytical results are +/- 2 sigma.

² Perceived to be false positives on a statistical basis.

³ Naturally occurring isotope.

2.4 References for Lysimeter, Perched and Aquifer Water Sample Radionuclide Data

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2.5 Environmental Monitoring Unit Data Base Aquifer Concentrations

Table 4 contains aquifer concentrations for radionuclides in RWMC vicinity wells from a data-base that is under construction by the Environmental Monitoring Program. The data base is informally called the Environmental Monitoring Information System (EMIS) and Bob Bates is the custodian. This data base has not yet undergone verification so the data presented are for informational purposes only. It is included since sampling results are presented for the same three wells (USGS-87, USGS-90, and the RWMC production well) as those tabulated in the RWMC Environmental Surveillance report series. [The limited overlap in data presented for the wells in the first half of 1992 is consistent.] The uncertainty column is believed to represent the one sigma level of uncertainty. Negative concentrations result from subtracting out laboratory background radioactivity and represent non-detects.

Table 4: EMIS Data Base (Unverified)

Well	Date	Nuclide	Conc.	Uncertainty	Units	Comments
USGS87	01-14-92	H-3	9.0E-07	2.0E-07	uCi/mL	

Table 4: EMIS Data Base (Unverified)

Well	Date	Nuclide	Conc.	Uncertainty	Units	Comments
USGS87	04-21-92	H-3	1.0E-06	0.2E-06	uCi/mL	
USGS87	07-09-92	H-3	1.0E-06	0.2E-06	uCi/mL	
USGS87	10-07-92	H-3	1.1E-06	0.2E-06	uCi/mL	
USGS87	01-19-93	H-3	1.1E-06	0.2E-06	uCi/mL	
USGS87	04-15-93	H-3	1.0E-06	0.2E-06	uCi/mL	
USGS87	07-15-93	H-3	1.0E-06	0.2E-06	uCi/mL	
USGS87	10-18-93	H-3	9.0E-07	0.2E-07	uCi/mL	
USGS87	01-10-94	H-3	1.1E-06	0.2E-06	uCi/mL	
USGS87	04-13-94	H-3	1.0E-06	0.2E-06	uCi/mL	
USGS90	01-16-92	H-3	1.5E-06	0.2E-06	uCi/mL	
USGS90	04-20-92	H-3	1.4E-06	0.2E-06	uCi/mL	
USGS90	07-15-92	H-3	1.5E-06	0.2E-06	uCi/mL	
USGS90	10-06-92	H-3	1.5E-06	0.2E-06	uCi/mL	
USGS90	05-03-93	H-3	1.3E-06	0.2E-06	uCi/mL	
USGS90	10-04-93	H-3	1.4E-06	0.2E-06	uCi/mL	
USGS90	01-11-94	H-3	1.3E-06	0.2E-06	uCi/mL	
USGS90	05-02-94	H-3	1.2E-06	0.2E-06	uCi/mL	
RWMC	01-14-92	H-3	1.4E-06	0.2E-06	uCi/mL	
RWMC	04-21-92	H-3	1.4E-06	0.2E-06	uCi/mL	
RWMC	07-14-92	H-3	1.6E-06	0.2E-06	uCi/mL	
RWMC	10-07-92	H-3	1.5E-06	0.2E-06	uCi/mL	
RWMC	01-19-93	H-3	1.3E-06	0.2E-06	uCi/mL	
RWMC	04-15-93	H-3	1.2E-06	0.2E-06	uCi/mL	
RWMC	07-15-93	H-3	1.7E-06	0.2E-06	uCi/mL	
RWMC	10-18-93	H-3	1.4E-06	0.2E-06	uCi/mL	
RWMC	01-10-94	H-3	1.7E-06	0.2E-06	uCi/mL	
RWMC	04-13-94	H-3	1.4E-06	0.2E-06	uCi/mL	

Table 4: EMIS Data Base (Unverified)

Well	Date	Nuclide	Conc.	Uncertainty	Units	Comments
RWMC	07-14-94	H-3	1.5E-06	0.2E-06	uCi/mL	
USGS87	01-14-92	SR-90	-0.3E-09	1.5E-09	uCi/mL	
USGS87	04-21-92	SR-90	-1E-09	2E-09	uCi/mL	
USGS87	07-09-92	SR-90	-2.2E-09	1.7E-09	uCi/mL	
USGS87	10-07-92	SR-90	-0.8E-09	1.7E-09	uCi/mL	
USGS87	01-19-93	SR-90	0E-09	2E-09	uCi/mL	
USGS87	04-15-93	SR-90	1.5E-09	1.7E-09	uCi/mL	
USGS87	07-15-93	SR-90	-1E-09	2E-09	uCi/mL	
USGS87	10-18-93	SR-90	-1.2E-09	1.7E-09	uCi/mL	
USGS87	01-10-94	SR-90	-5.E-09	2.E-09	uCi/mL	<MDL
USGS90	01-16-92	SR-90	0.6E-09	1.4E-09	uCi/mL	
USGS90	04-20-92	SR-90	-2E-09	2E-09	uCi/mL	
USGS90	07-15-92	SR-90	-3.2E-09	1.7E-09	uCi/mL	
USGS90	10-06-92	SR-90	1.1E-09	1.6E-09	uCi/mL	
USGS90	05-03-93	SR-90	-2.2E-09	1.7E-09	uCi/mL	
USGS90	10-04-93	SR-90	-0.8E-09	1.4E-09	uCi/mL	
USGS90	01-11-94	SR-90	-3.E-09	2.E-09	uCi/mL	
USGS90	05-02-94	SR-90	10.5E-09	1.6E-09	uCi/mL	<MDL
RWMC	01-14-92	SR-90	2E-09	2E-09	uCi/mL	
RWMC	04-21-92	SR-90	0E-09	2E-09	uCi/mL	
RWMC	07-14-92	SR-90	3E-09	3E-09	uCi/mL	
RWMC	10-07-92	SR-90	-2E-09	2E-09	uCi/mL	
RWMC	01-19-93	SR-90	0E-09	2E-09	uCi/mL	
RWMC	04-15-93	SR-90	0E-09	2E-09	uCi/mL	
RWMC	07-15-93	SR-90	-2E-09	2E-09	uCi/mL	
RWMC	10-18-93	SR-90	0E-09	2E-09	uCi/mL	
RWMC	01-10-94	SR-90	-1.4E-09	1.8E-09	uCi/mL	<MDL

Table 4: EMIS Data Base (Unverified)

Well	Date	Nuclide	Conc.	Uncertainty	Units	Comments
RWMC	04-13-94	SR-90	-1.0E-09	0.3E-08	uCi/mL	
USGS87	01-14-92	PU-238	0E-11	2E-11	uCi/mL	
USGS87	04-21-92	PU-238	-4E-11	3E-11	uCi/mL	
USGS87	07-09-92	PU-238	1E-11	2E-11	uCi/mL	
USGS87	10-07-92	PU-238	1E-11	2E-11	uCi/mL	
USGS87	01-19-93	PU-238	0E-11	2E-11	uCi/mL	
USGS87	04-15-93	PU-238	-1E-11	2E-11	uCi/mL	
USGS87	07-15-93	PU-238	0E-11	1E-11	uCi/mL	
USGS87	10-18-93	PU-238	2E-11	1E-11	uCi/mL	
USGS87	01-10-94	PU-238	0.6E-11	1.6E-11	uCi/mL	<MDL
USGS90	01-16-92	PU-238	0.0E-10	0.2E-10	uCi/mL	
USGS90	04-20-92	PU-238	0.0E-10	0.3E-10	uCi/mL	
USGS90	07-15-92	PU-238	0.0E-10	0.2E-10	uCi/mL	
USGS90	10-06-92	PU-238	-1E-11	2E-11	uCi/mL	
USGS90	05-03-93	PU-238	1E-11	2E-11	uCi/mL	
USGS90	10-04-93	PU-238	1E-11	2E-11	uCi/mL	
USGS90	01-11-94	PU-238	-0.1E-11	1.4E-11	uCi/mL	<MDL
RWMC	04-21-92	PU-238	-2E-11	3E-11	uCi/mL	
RWMC	10-07-92	PU-238	2E-11	2E-11	uCi/mL	
RWMC	04-15-93	PU-238	1E-11	2E-11	uCi/mL	
RWMC	10-18-93	PU-238	0E-11	1E-11	uCi/mL	
USGS87	01-10-94	PU-239/240	0.3E-11	1.1E-11	uCi/mL	<MDL
USGS90	01-11-94	PU-239/240	0.7E-11	1.3E-11	uCi/mL	<MDL
USGS87	01-10-94	AM-241"	2.E-11	2.E-11	uCi/mL	<MDL
USGS90	01-11-94	AM-241	2.E-11	2.E-11	uCi/mL	<MDL

2.6 Environmental Restoration Data Base Aquifer Concentrations

The following are results of Environmental Restoration aquifer water sampling for radionuclides Am-241, C-14, I-129, Pu-238, Pu-239/240, Sr-90, and H-3. Aquifer monitoring wells drilled around the RWMC in addition to the USGS monitoring wells are included in this data base. These are generally referred to as the "M" wells. The monitoring results are contained in the Environmental Restoration Information System (ERIS) database and were queried by Mack Galusha. The data are all validated to at least level C. The data qualifiers are as follows: U - not detected at the 95% confidence level (2 sigma), J - quantity estimated, R - rejected due to analytical procedures. Uncertainties are presented in terms of one-sigma. The results of the data base query are arranged by radionuclide chronologically by well location.

Table 5: ERIS Water Sample Radionuclide Concentrations

Well	Date	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
M10S	21-OCT-92	Am-241	0	.3	U	pCi/L	N/A
M10S	26-FEB-93	Am-241	0	.1	U	pCi/L	640
M10S	13-MAY-93	Am-241	.3	.1	J	pCi/L	640
M10S	12-JAN-95	Am-241	.09	.06	U	pCi/L	640
M1S	19-OCT-92	Am-241	0	.2	U	pCi/L	N/A
M1S	12-MAY-93	Am-241	.1	.1	UJ	pCi/L	631
M4D	04-MAR-93	Am-241	0	.1	U	pCi/L	821
M4D	13-MAY-93	Am-241	0	.1	UJ	pCi/L	821
M4D	27-JUL-93	Am-241	.1	.1	U	pCi/L	821
M4D	04-NOV-93	Am-241	0	.07		pCi/L	821
M4D	04-NOV-93	Am-241	0	.05		pCi/L	821
M10S	20-JUN-94	C-14	0	1.5		pCi/L	640
M10S	02-NOV-94	C-14	6.7	4.1		pCi/L	640
M10S	12-JAN-95	C-14	0	4.4	U	pCi/L	640
M1S	20-JUN-94	C-14	0	1.9		pCi/L	631
M1S	02-NOV-94	C-14	.9	3.9		pCi/L	631
M1S	11-JAN-95	C-14	0	4.1	U	pCi/L	631
M3S	21-JUN-94	C-14	0	2.1		pCi/L	626
M3S	02-NOV-94	C-14	1.3	4.3		pCi/L	626

Table 5: ERIS Water Sample Radionuclide Concentrations

Well	Date	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
M3S	12-JAN-95	C-14	13	6		pCi/L	626
M4D	20-JUN-94	C-14	5.7	1.7		pCi/L	821
M4D	20-JUN-94	C-14	0	1.9		pCi/L	821
M4D	02-NOV-94	C-14	.6	4.4		pCi/L	821
M4D	02-NOV-94	C-14	0	3.9		pCi/L	821
M4D	11-JAN-95	C-14	28	5		pCi/L	821
M4D	11-JAN-95	C-14	4	4.6	U	pCi/L	821
M6S	20-JUN-94	C-14	3.3	1.8		pCi/L	661
M6S	02-NOV-94	C-14	11	5		pCi/L	661
M6S	11-JAN-95	C-14	0	4.4	U	pCi/L	661
M7S	21-JUN-94	C-14	.05	1.58		pCi/L	621
M7S	02-NOV-94	C-14	6.4	4.2		pCi/L	621
M7S	12-JAN-95	C-14	0	4.4	U	pCi/L	621
M10S	20-JUN-94	I-129	0	.4		pCi/L	640
M10S	02-NOV-94	I-129	0	.3		pCi/L	640
M10S	12-JAN-95	I-129	0	.3	U	pCi/L	640
M1S	20-JUN-94	I-129	0	.4		pCi/L	631
M1S	02-NOV-94	I-129	0	.3		pCi/L	631
M1S	11-JAN-95	I-129	.1	.3	U	pCi/L	631
M3S	21-JUN-94	I-129	0	.3		pCi/L	626
M3S	02-NOV-94	I-129	0	.2		pCi/L	626
M3S	12-JAN-95	I-129	0	.3	U	pCi/L	626
M4D	20-JUN-94	I-129	.1	.3		pCi/L	821
M4D	20-JUN-94	I-129	0	.3		pCi/L	821
M4D	02-NOV-94	I-129	0	.4		pCi/L	821
M4D	02-NOV-94	I-129	0	.2		pCi/L	821
M4D	11-JAN-95	I-129	0	.3	U	pCi/L	821

Table 5: ERIS Water Sample Radionuclide Concentrations

Well	Date	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
M4D	11-JAN-95	I-129	0	.3	U	pCi/L	821
M6S	20-JUN-94	I-129	0	.3		pCi/L	661
M6S	02-NOV-94	I-129	0	9		pCi/L	661
M6S	11-JAN-95	I-129	0	.4	U	pCi/L	661
M7S	21-JUN-94	I-129	0	.4		pCi/L	621
M7S	02-NOV-94	I-129	0	.2		pCi/L	621
M7S	12-JAN-95	I-129	0	.3	U	pCi/L	621
M10S	21-OCT-92	Pu-238	0	.1	U	pCi/L	N/A
M10S	26-FEB-93	Pu-238	0	.1	U	pCi/L	640
M10S	13-MAY-93	Pu-238	0	.2	U	pCi/L	640
M10S	04-NOV-93	Pu-238	.04	.08		pCi/L	640
M10S	12-JAN-95	Pu-238	.1	.08	U	pCi/L	640
M1S	19-OCT-92	Pu-238	0	.1	U	pCi/L	N/A
M1S	12-MAY-93	Pu-238	0	.1	U	pCi/L	631
M1S	04-NOV-93	Pu-238	0	.07		pCi/L	631
M3S	05-NOV-93	Pu-238	0	.05		pCi/L	626
M4D	04-MAR-93	Pu-238	0	.1	U	pCi/L	821
M4D	13-MAY-93	Pu-238	.3	.1	U	pCi/L	821
M4D	27-JUL-93	Pu-238	0	.1	U	pCi/L	821
M4D	04-NOV-93	Pu-238	0	.05		pCi/L	821
M4D	04-NOV-93	Pu-238	0	.05		pCi/L	821
M4D	04-NOV-93	Pu-238	0	.04		pCi/L	821
M4D	04-NOV-93	Pu-238	0	.04		pCi/L	821
M6S	05-NOV-93	Pu-238	0	.06		pCi/L	661
M7S	09-NOV-93	Pu-238	.1	.1		pCi/L	621
M10S	21-OCT-92	Pu-239/240	0	.1	U	pCi/L	N/A
M10S	26-FEB-93	Pu-239/240	0	.1	U	pCi/L	640

Table 5: ERIS Water Sample Radionuclide Concentrations

Well	Date	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
M10S	13-MAY-93	Pu-239/240	0	.2	U	pCi/L	640
M10S	04-NOV-93	Pu-239/240	0	.08		pCi/L	640
M10S	12-JAN-95	Pu-239/240	0	.04	U	pCi/L	640
M1S	19-OCT-92	Pu-239/240	0	.1	U	pCi/L	N/A
M1S	12-MAY-93	Pu-239/240	0	.1	U	pCi/L	631
M1S	04-NOV-93	Pu-239/240	0	.07		pCi/L	631
M3S	05-NOV-93	Pu-239/240	0	.09		pCi/L	626
M4D	04-MAR-93	Pu-239/240	0	.1	U	pCi/L	821
M4D	13-MAY-93	Pu-239/240	4.3	.5		pCi/L	821
M4D	27-JUL-93	Pu-239/240	0	.1	U	pCi/L	821
M4D	04-NOV-93	Pu-239/240	0	.01		pCi/L	821
M4D	04-NOV-93	Pu-239/240	1.3	.3		pCi/L	821
M4D	04-NOV-93	Pu-239/240	0	.06		pCi/L	821
M4D	04-NOV-93	Pu-239/240	0	.05		pCi/L	821
M6S	05-NOV-93	Pu-239/240	0	.07		pCi/L	661
M7S	09-NOV-93	Pu-239/240	.4	.2		pCi/L	621
M10S	21-OCT-92	Sr-90	.2	.4	U	pCi/L	N/A
M10S	26-FEB-93	Sr-90	0	.3	U	pCi/L	640
M10S	13-MAY-93	Sr-90	0	.3	U	pCi/L	640
M10S	28-JUL-93	Sr-90	0	.4	U	pCi/L	640
M10S	17-JAN-94	Sr-90	.2	.3		pCi/L	640
M10S	18-APR-94	Sr-90	.4	.3		pCi/L	640
M10S	20-JUN-94	Sr-90	0	.4		pCi/L	640
M10S	12-JAN-95	Sr-90	.1	.3	U	pCi/L	640
M1S	19-OCT-92	Sr-90	0	1	U	pCi/L	N/A
M1S	11-JAN-95	Sr-90	0	.2	U	pCi/L	631
M3S	28-JUL-93	Sr-90	.5	.3	U	pCi/L	625.8

Table 5: ERIS Water Sample Radionuclide Concentrations

Well	Date	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
M4D	21-OCT-92	Sr-90	.7	.5	U	pCi/L	N/A
M4D	04-MAR-93	Sr-90	.2	.3	U	pCi/L	821
M4D	13-MAY-93	Sr-90	.1	.4	U	pCi/L	821
M4D	27-JUL-93	Sr-90	.3	.4	U	pCi/L	821
M4D	04-NOV-93	Sr-90	.3	.4		pCi/L	821
M4D	04-NOV-93	Sr-90	.4	.5		pCi/L	821
M4D	04-NOV-93	Sr-90	.7	.5		pCi/L	821
M4D	04-NOV-93	Sr-90	.6	.5		pCi/L	821
M4D	18-JAN-94	Sr-90	0	.3		pCi/L	821
M4D	18-JAN-94	Sr-90	0	.3		pCi/L	821
M4D	19-APR-94	Sr-90	0	.3		pCi/L	821
M4D	19-APR-94	Sr-90	.1	.4		pCi/L	821
M4D	20-JUN-94	Sr-90	.6	.4		pCi/L	821
M4D	20-JUN-94	Sr-90	0	.4		pCi/L	821
M4D	02-NOV-94	Sr-90	.5	.4		pCi/L	821
M4D	02-NOV-94	Sr-90	.3	.3		pCi/L	821
M4D	11-JAN-95	Sr-90	.2	.3	U	pCi/L	821
M4D	11-JAN-95	Sr-90	0	2.4	U	pCi/L	821
M6S	04-MAR-93	Sr-90	0	.3	U	pCi/L	661
M6S	18-APR-94	Sr-90	.4	.3		pCi/L	661
M7S	20-OCT-92	Sr-90	.4	.5	U	pCi/L	N/A
M7S	04-MAR-93	Sr-90	0	.3	U	pCi/L	621
M7S	27-JUL-93	Sr-90	.1	.3	U	pCi/L	621
M7S	18-APR-94	Sr-90	0	.3		pCi/L	621
M7S	12-JAN-95	Sr-90	0	.2	U	pCi/L	621
M10S	20-JUN-94	Tc-99	.3	.4		pCi/L	640
M10S	02-NOV-94	Tc-99	0	.3		pCi/L	640

Table 5: ERIS Water Sample Radionuclide Concentrations

Well	Date	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
M10S	12-JAN-95	Tc-99	.1	.3	U	pCi/L	640
M1S	20-JUN-94	Tc-99	0	.3		pCi/L	631
M1S	02-NOV-94	Tc-99	.8	.4		pCi/L	631
M1S	11-JAN-95	Tc-99	.3	.3	U	pCi/L	631
M3S	21-JUN-94	Tc-99	.3	.4		pCi/L	626
M3S	02-NOV-94	Tc-99	.8	.3		pCi/L	626
M3S	12-JAN-95	Tc-99	.1	.3	U	pCi/L	626
M4D	20-JUN-94	Tc-99	.2	.3		pCi/L	821
M4D	20-JUN-94	Tc-99	.2	.4		pCi/L	821
M4D	02-NOV-94	Tc-99	.3	.3		pCi/L	821
M4D	02-NOV-94	Tc-99	.2	.3		pCi/L	821
M4D	11-JAN-95	Tc-99	.8	.3	U	pCi/L	821
M4D	11-JAN-95	Tc-99	0	.3	U	pCi/L	821
M6S	20-JUN-94	Tc-99	.4	.4		pCi/L	661
M6S	02-NOV-94	Tc-99	.2	.3		pCi/L	661
M6S	11-JAN-95	Tc-99	0	.3	U	pCi/L	661
M7S	21-JUN-94	Tc-99	.2	.4		pCi/L	621
M7S	02-NOV-94	Tc-99	.7	.3		pCi/L	621
M7S	12-JAN-95	Tc-99	.3	.3	U	pCi/L	621
M10S	21-OCT-92	Tritium	0	140	U	pCi/L	N/A
M10S	26-FEB-93	Tritium	210	140	U	pCi/L	640
M10S	13-MAY-93	Tritium	75	150	U	pCi/L	640
M10S	28-JUL-93	Tritium	220	130		pCi/L	640
M10S	04-NOV-93	Tritium	0	148		pCi/L	640
M10S	17-JAN-94	Tritium	0	100		pCi/L	640
M10S	18-APR-94	Tritium	0	100		pCi/L	640
M10S	20-JUN-94	Tritium	20	100		pCi/L	640

Table 5: ERIS Water Sample Radionuclide Concentrations

Well	Date	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
M10S	02-NOV-94	Tritium	0	123		pCi/L	640
M10S	12-JAN-95	Tritium	0	126	U	pCi/L	640
M1S	19-OCT-92	Tritium	80	130	U	pCi/L	N/A
M1S	25-FEB-93	Tritium	220	140	U	pCi/L	631
M1S	12-MAY-93	Tritium	0	120	U	pCi/L	631
M1S	27-JUL-93	Tritium	230	130		pCi/L	631
M1S	04-NOV-93	Tritium	0	148		pCi/L	631
M1S	17-JAN-94	Tritium	0	100		pCi/L	631
M1S	19-APR-94	Tritium	150	105		pCi/L	631
M1S	20-JUN-94	Tritium	60	100		pCi/L	631
M1S	02-NOV-94	Tritium	0	123		pCi/L	631
M1S	11-JAN-95	Tritium	0	126	U	pCi/L	631
M3S	20-OCT-92	Tritium	1730	160		pCi/L	N/A
M3S	26-FEB-93	Tritium	1700	150		pCi/L	625.7
M3S	26-FEB-93	Tritium	1800	150		pCi/L	625.7
M3S	12-MAY-93	Tritium	1600	200		pCi/L	626
M3S	28-JUL-93	Tritium	1700	160		pCi/L	625.8
M3S	05-NOV-93	Tritium	1500	150		pCi/L	626
M3S	18-JAN-94	Tritium	0	100		pCi/L	626
M3S	18-APR-94	Tritium	1900	350		pCi/L	626
M3S	21-JUN-94	Tritium	1700	200		pCi/L	626
M3S	02-NOV-94	Tritium	1250	150		pCi/L	626
M3S	12-JAN-95	Tritium	2010	150		pCi/L	626
M4D	21-OCT-92	Tritium	16	140	U	pCi/L	N/A
M4D	04-MAR-93	Tritium	40	140	U	pCi/L	821
M4D	13-MAY-93	Tritium	70	130	U	pCi/L	821
M4D	27-JUL-93	Tritium	270	130	U	pCi/L	821

Table 5: ERIS Water Sample Radionuclide Concentrations

Well	Date	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
M4D	04-NOV-93	Tritium	40	150		pCi/L	821
M4D	04-NOV-93	Tritium	0	148		pCi/L	821
M4D	18-JAN-94	Tritium	90	110		pCi/L	821
M4D	18-JAN-94	Tritium	1500	200		pCi/L	821
M4D	19-APR-94	Tritium	0	100		pCi/L	821
M4D	19-APR-94	Tritium	0	100		pCi/L	821
M4D	20-JUN-94	Tritium	0	100		pCi/L	821
M4D	20-JUN-94	Tritium	0	100		pCi/L	821
M4D	02-NOV-94	Tritium	0	123		pCi/L	821
M4D	02-NOV-94	Tritium	0	123		pCi/L	821
M4D	11-JAN-95	Tritium	0	126	U	pCi/L	821
M4D	11-JAN-95	Tritium	265	116		pCi/L	821
M6S	21-OCT-92	Tritium	0	140	U	pCi/L	N/A
M6S	04-MAR-93	Tritium	70	140	U	pCi/L	661
M6S	13-MAY-93	Tritium	210	150	U	pCi/L	661
M6S	13-MAY-93	Tritium	120	150	U	pCi/L	661
M6S	28-JUL-93	Tritium	320	130	U	pCi/L	661
M6S	28-JUL-93	Tritium	270	130	U	pCi/L	661
M6S	05-NOV-93	Tritium	0	148		pCi/L	661
M6S	18-JAN-94	Tritium	0	100		pCi/L	661
M6S	18-APR-94	Tritium	0	100		pCi/L	661
M6S	20-JUN-94	Tritium	80	100		pCi/L	661
M6S	02-NOV-94	Tritium	0	123		pCi/L	661
M6S	11-JAN-95	Tritium	218	113	U	pCi/L	661
M7S	20-OCT-92	Tritium	1440	160		pCi/L	N/A
M7S	04-MAR-93	Tritium	1600	150		pCi/L	621
M7S	04-MAR-93	Tritium	1400	150		pCi/L	621

Table 5: ERIS Water Sample Radionuclide Concentrations

Well	Date	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
M7S	13-MAY-93	Tritium	1600	150		pCi/L	621
M7S	13-MAY-93	Tritium	1400	150		pCi/L	621
M7S	27-JUL-93	Tritium	1700	160		pCi/L	621
M7S	27-JUL-93	Tritium	1600	160		pCi/L	621
M7S	09-NOV-93	Tritium	1500	150		pCi/L	621
M7S	18-JAN-94	Tritium	1300	200		pCi/L	621
M7S	18-APR-94	Tritium	1300	150		pCi/L	621
M7S	21-JUN-94	Tritium	1400	200		pCi/L	621
M7S	02-NOV-94	Tritium	1020	150		pCi/L	621
M7S	12-JAN-95	Tritium	1650	170		pCi/L	621

Note: This concludes the compilation of water radionuclide information. Next, soil and basalt solid radionuclide concentrations are presented.

3. Basalt and Soil Radionuclide Concentration Data

Two types of data are presented for solid radionuclide concentrations. The first is a comprehensive listing from the ERIS data base. The second consists of copied tables from an Environmental Restoration Summation document prepared by Dames and Moore, the RWMC Environmental Surveillance Program, and from the Subsurface Investigation Program. Each of these latter sources is presented in a separate subsection with appropriate references.

3.1 Environmental Restoration Data Base Basalt and Soil Radionuclide Concentration Data

The following are results of Environmental Restoration sampling of soil and archived basalt samples for radionuclides Am-241, C-14, I-129, Pu-238, Pu-239/240, Sr-90, and H-3. They are contained in the Environmental Restoration Information System (ERIS) database and were queried by Mack Galusha. The data are all validated to at least level C. The data qualifiers are as follows: U - not detected at the 95% confidence level (2 sigma), J - quantity estimated, R - rejected due to analytical procedures. Non-detect samples are included in the table for completeness.

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
#10	18-MAR-92	PAD-A	Am-241	1.16	.136		pCi/g	0-5
#17	19-MAR-92	PAD-A	Am-241	3.47	.389		pCi/g	0-6
#2	19-MAR-92	PAD-A	Am-241	.943	.249		pCi/g	0-4.5
#24	19-MAR-92	PAD-A	Am-241	6.66	.609		pCi/g	0-3
#34	16-MAR-92	PAD-A	Am-241	1.23	.284		pCi/g	0-7
#35	16-MAR-92	PAD-A	Am-241	.785	.239		pCi/g	0-4.5
#36	16-MAR-92	PAD-A	Am-241	1.55	.193		pCi/g	0-5.5
#38	16-MAR-92	PAD-A	Am-241	1.93	.337		pCi/g	0-9
#38	16-MAR-92	PAD-A	Am-241	2.11	.43		pCi/g	0-9
4E (1)	26-AUG-94	SUBSUR	Am-241	9.6	.7		pCi/g	10-22.5
76-1	25-MAY-93	FRACT BASALT	Am-241	0	.1	U	pCi/g	109-110
76-1	25-MAY-93	RUBBLE ZONE	Am-241	0	.1	U	pCi/g	204.9-205.9
76-2	25-MAY-93	RUBBLE ZONE	Am-241	0	.1	U	pCi/g	78-79
76-2	25-MAY-93	FRACT BASALT	Am-241	0	.1	U	pCi/g	220.8-221.5
76-2	25-MAY-93	MASS BASALT	Am-241	.1	.1	U	pCi/g	87-88
76-2	25-MAY-93	FRACT BASALT	Am-241	0	.1	U	pCi/g	147-148
76-3	25-MAY-93	SED INTBED	Am-241	0	.1	U	pCi/g	25.8-27.7
76-3	25-MAY-93	MASS BASALT	Am-241	0	.1	U	pCi/g	215-215.8

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
76-3	25-MAY-93	FRACT BASALT	Am-241	0	.1	U	pCi/g	94-95
76-4	25-MAY-93	SED INTBED	Am-241	.2	.1		pCi/g	98.6-101.1
76-4	25-MAY-93	SED INTBED	Am-241	0	.1	U	pCi/g	20.5-23
76-4A	25-MAY-93	FRACT BASALT	Am-241	0	.1	U	pCi/g	45-45.8
76-4A	25-MAY-93	SED INTBED	Am-241	.1	.1	U	pCi/g	223.3-224.7
76-4A	25-MAY-93	SED INTBED	Am-241	.1	.1	U	pCi/g	97.8-100.2
76-5	25-MAY-93	MASS BASALT	Am-241	0	.02	U	pCi/g	45.1-46
76-5	25-MAY-93	FRACT BASALT	Am-241	0	.1	U	pCi/g	48-49
77-2	25-MAY-93	RUBBLE ZONE	Am-241	0	.1	U	pCi/g	25.5-26
77-2	25-MAY-93	FRACT BASALT	Am-241	0	.1	U	pCi/g	199.5-200.3
77-2	25-MAY-93	FRACT BASALT	Am-241	0	.1	U	pCi/g	72.6-73.5
78-1	25-MAY-93	RUBBLE ZONE	Am-241	0	.1	U	pCi/g	23.6-24.5
78-1	25-MAY-93	RUBBLE ZONE	Am-241	0	.1	U	pCi/g	66-66.8
78-2	25-MAY-93	RUBBLE ZONE	Am-241	.1	.1	U	pCi/g	32.8-33.4
78-2	25-MAY-93	RUBBLE ZONE	Am-241	0	.02	U	pCi/g	126.5-127.8
78-2	25-MAY-93	SED INTBED	Am-241	0	.1	U	pCi/g	226.3-230.1
78-3	25-MAY-93	RUBBLE ZONE	Am-241	0	.1	U	pCi/g	56.5-57.7
78-3	25-MAY-93	MASS BASALT	Am-241	0	.02	U	pCi/g	122.4-123.3

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
78-3	25-MAY-93	RUBBLE ZONE	Am-241	0	.1	U	pCi/g	198.7-199.7
78-5	25-MAY-93	RUBBLE ZONE	Am-241	0	.1	U	pCi/g	65.5-66.8
78-5	25-MAY-93	RUBBLE ZONE	Am-241	.1	.1	U	pCi/g	130.6-132
78-5	25-MAY-93	MASS BASALT	Am-241	0	.1	U	pCi/g	172.9-173.7
78-5	26-MAY-93	FRACT BASALT	Am-241	0	.02	U	pCi/g	220.3-224.7
79-2	26-MAY-93	FRACT BASALT	Am-241	.1	.1	U	pCi/g	27-29
79-2	26-MAY-93	FRACT BASALT	Am-241	0	.1	U	pCi/g	70-70.6
79-2	26-MAY-93	MASS BASALT	Am-241	0	.1	U	pCi/g	221.5-222.5
79-3	26-MAY-93	RUBBLE ZONE	Am-241	.1	.1	U	pCi/g	53.9-55
79-3	26-MAY-93	FRACT BASALT	Am-241	.1	.1	U	pCi/g	100.6-101.8
8801D	25-MAY-93	RUBBLE ZONE	Am-241	0	.1	U	pCi/g	43.2-44.7
8801D	25-MAY-93	FRACT BASALT	Am-241	0	.1	UJ	pCi/g	170.3-171.3
8801D	25-MAY-93	FRACT BASALT	Am-241	0	.02	U	pCi/g	87-89
8802D	25-MAY-93	RUBBLE ZONE	Am-241	0	.02	UJ	pCi/g	95-96
8901D	25-MAY-93	SED INTBED	Am-241	0	.1	U	pCi/g	243.1-245.2
8901D	25-MAY-93	SED INTBED	Am-241	.3	.1		pCi/g	238.1-239.3
D-10	25-MAY-93	RUBBLE ZONE	Am-241	.1	.1	U	pCi/g	152-153
D-10	25-MAY-93	RUBBLE ZONE	Am-241	0	.1	U	pCi/g	194-196

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
D-10	25-MAY-93	FRACT BASALT	Am-241	0	.1	U	pCi/g	220-221.5
RWMC 2-4	13-AUG-85	SURFACE SOIL	Am-241	.686	.106		pCi/g	0-0.12
RWMC 2-4	13-AUG-85	SURFACE SOIL	Am-241	.25	.04	J	pCi/g	0-0.12
RWMC 2-4	13-AUG-85	SURFACE SOIL	Am-241	.09	.03	J	pCi/g	0.12-0.33
USGS-91	26-MAY-93	FRACT BASALT	Am-241	.1	.1	UJ	pCi/g	23.4-25
USGS-91	26-MAY-93	RUBBLE ZONE	Am-241	.2	.1	J	pCi/g	106-108
USGS-93	26-MAY-93	FRACT BASALT	Am-241	0	.03	UJ	pCi/g	14-16
USGS-93	26-MAY-93	FRACT BASALT	Am-241	.2	.1	J	pCi/g	222.5-236
USGS-94	26-MAY-93	FRACT BASALT	Am-241	.1	.1	UJ	pCi/g	116.3-118
USGS-94	26-MAY-93	FRACT BASALT	Am-241	0	.1	UJ	pCi/g	217-220.2
USGS-95	26-MAY-93	FRACT BASALT	Am-241	0	.1	UJ	pCi/g	26.1-28
USGS-95	26-MAY-93	FRACT BASALT	Am-241	0	.03	UJ	pCi/g	96-114.4
USGS-95	26-MAY-93	FRACT BASALT	Am-241	0	.03	UJ	pCi/g	235.2-239
10V (1)	01-SEP-94	SOIL	C-14	-.053	.15	U	pCi/g	7-10
10V (1)	30-SEP-94	SOIL	C-14	.069	.12	U	pCi/g	98-124
2E (1)	25-AUG-94	SOIL	C-14	-.098	.16	U	pCi/g	11-16.5
2E (1)	03-NOV-94	SOIL	C-14	.072	.12	U	pCi/g	97-101
3E (1)	25-AUG-94	SOIL	C-14	.088	.15	U	pCi/g	3-5.5

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
3V (1)	20-SEP-94	SOIL	C-14	.077	.12	U	pCi/g	100-104
4E (1)	26-AUG-94	SOIL	C-14	.079	.15	U	pCi/g	10-22.5
4V (1)	19-AUG-94	SOIL	C-14	-.088	.15	U	pCi/g	5-12
4V (1)	02-SEP-94	SOIL	C-14	.08	.13	U	pCi/g	105.2-118
5E (1)	15-SEP-94	SOIL	C-14	-.0044	.15	U	pCi/g	18-21
5E (1)	11-OCT-94	SOIL	C-14	.04	.12	U	pCi/g	98-104
5V (1)	26-AUG-94	SOIL	C-14	.13	.16	U	pCi/g	5-13
5V (1)	18-OCT-94	SOIL	C-14	-.012	.12	U	pCi/g	99-102
6V (1)	17-AUG-94	SOIL	C-14	.12	.15	U	pCi/g	2-10
6V (1)	13-OCT-94	SOIL	C-14	.005	.12	U	pCi/g	92-95
7V (1)	18-AUG-94	SOIL	C-14	.11	.16	U	pCi/g	8-15
7V (1)	26-SEP-94	SOIL	C-14	.2	.12	U	pCi/g	85-92
8V (1)	18-AUG-94	SOIL	C-14	.11	.16	U	pCi/g	6-11
8V (1)	12-SEP-94	SOIL	C-14	.13	.13	U	pCi/g	100-125
9V (1)	26-AUG-94	SOIL	C-14	-.0054	.15	U	pCi/g	15-21.5
#29	18-MAR-92	PAD-A	Co-60	.136	.0234		pCi/g	0-4
#1	23-MAR-92	PAD-A	Cs-137	.0746	.0209		pCi/g	0-5
#2	19-MAR-92	PAD-A	Cs-137	.0998	.0232		pCi/g	0-4.5

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft))
#22	17-MAR-92	PAD-A	Cs-137	.0609	.0162		pCi/g	0-7
#4	18-MAR-92	PAD-A	Cs-137	.52	.0762		pCi/g	0-2.5
#5	18-MAR-92	PAD-A	Cs-137	.0842	.0224		pCi/g	0-1.5
300 YD S OF TSA	30-JUN-93	CONTOUR SOIL-1	Cs-137	.0906	.0226		pCi/g	SURFACE
300 YD S OF TSA	30-JUN-93	CONTOUR SOIL-2	Cs-137	.152	.0286		pCi/g	SURFACE
3E (1)	25-AUG-94	SUBSUR	Cs-137	.09	.02		pCi/g	3-5.5
6V (1)	17-AUG-94	SUBSUR	Cs-137	.106	.019		pCi/g	2-10
76-1	25-MAY-93	FRAC BASLT	Cs-137			U	pCi/g	109-110
76-1	25-MAY-93	RUBBLE ZONE	Cs-137			U	pCi/g	204.9-205.9
76-2	25-MAY-93	RUBBLE ZONE	Cs-137			U	pCi/g	78-79
76-2	25-MAY-93	MASS BASLT	Cs-137			U	pCi/g	87-88
76-2	25-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	147-148
76-2	25-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	220.8-221.5
76-3	25-MAY-93	SED INTBD	Cs-137			U	pCi/g	25.8-27.7
76-3	25-MAY-93	MASS BASALT	Cs-137			U	pCi/g	215-215.8
76-3	25-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	94-95
76-4	25-MAY-93	SED INTBED	Cs-137			U	pCi/g	98.6-101.1
76-4	25-MAY-93	SED INTBED	Cs-137			U	pCi/g	20.5-23

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft))
76-4A	25-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	45-45.8
76-4A	25-MAY-93	SED INTBED	Cs-137			U	pCi/g	97.8-100.2
76-4A	25-MAY-93	SED INTBED	Cs-137			U	pCi/g	223.3-224.7
76-5	25-MAY-93	MASS BASALT	Cs-137			U	pCi/g	45.1-46
76-5	25-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	48-49
77-2	25-MAY-93	RUBBLE ZONE	Cs-137			U	pCi/g	25.5-26
77-2	25-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	72.6-73.5
77-2	25-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	199.5-200.3
78-1	25-MAY-93	RUBBLE ZONE	Cs-137			U	pCi/g	23.6-24.5
78-1	25-MAY-93	RUBBLE ZONE	Cs-137			U	pCi/g	66-66.8
78-2	25-MAY-93	RUBBLE ZONE	Cs-137			U	pCi/g	32.8-33.4
78-2	25-MAY-93	RUBBLE ZONE	Cs-137			U	pCi/g	126.5-127.8
78-2	25-MAY-93	SED INTBED	Cs-137			U	pCi/g	226.3-230.1
78-3	25-MAY-93	RUBBLE ZONE	Cs-137			U	pCi/g	56.5-57.7
78-3	25-MAY-93	MASS BASALT	Cs-137			U	pCi/g	122.4-123.3
78-3	25-MAY-93	RUBBLE ZONE	Cs-137			U	pCi/g	198.7-199.7
78-5	25-MAY-93	RUBBLE ZONE	Cs-137			U	pCi/g	65.5-66.8
78-5	25-MAY-93	RUBBLE ZONE	Cs-137			U	pCi/g	130.6-132

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft))
78-5	25-MAY-93	MASS BASALT	Cs-137			U	pCi/g	172.9-173.7
78-5	26-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	220.3-224.7
79-2	26-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	27-29
79-2	26-MAY-93	MASS BASALT	Cs-137			U	pCi/g	221.5-222.5
79-2	26-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	70-70.6
79-3	26-MAY-93	RUBBLE ZONE	Cs-137			U	pCi/g	53.9-55
79-3	26-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	100.6-101.8
8801D	25-MAY-93	RUBBLE ZONE	Cs-137			U	pCi/g	43.2-44.7
8801D	25-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	87-89
8801D	25-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	170.3-171.3
8802D	25-MAY-93	RUBBLE ZONE	Cs-137			U	pCi/g	95-96
8901D	25-MAY-93	SED INTBED	Cs-137			U	pCi/g	243.1-245.2
8901D	25-MAY-93	SED INTBED	Cs-137			U	pCi/g	238-1-239.3
D-10	25-MAY-93	RUBBLE ZONE	Cs-137			U	pCi/g	152-153
D-10	25-MAY-93	RUBBLE ZONE	Cs-137			U	pCi/g	194-196
D-10	25-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	220-221.5
EE TRANS-1	26-AUG-93	SURFACE SOILS	Cs-137	.735	.0731		pCi/g	0-.33
EE TRANS-1	26-AUG-93	SURFACE SOILS	Cs-137	.642	.0685		pCi/g	0-.33

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
EE TRANS-2	26-AUG-93	SURFACE SOILS	Cs-137	.375	.0441		pCi/g	0-.33
RWMC 2-4	13-AUG-85	SURFACE SOIL	Cs-137	.789	.0738		pCi/g	0-0.12
RWMC 2-4	13-AUG-85	SURFACE SOIL	Cs-137	.251	.0351		pCi/g	0.12-0.33
RWMC 2-4	13-AUG-85	SURFACE SOIL	Cs-137	1.15	.101		pCi/g	0-0.12
SE TRANS-1	26-AUG-93	SURFACE SOILS	Cs-137	.178	.0294		pCi/g	0-.33
SE TRANS-2	26-AUG-93	SURFACE SOILS	Cs-137	.348	.0463		pCi/g	0-.33
SE TRANS-3	26-AUG-93	SURFACE SOILS	Cs-137	.19	.036		pCi/g	0-.33
SE TRANS-4	26-AUG-93	SURFACE SOILS	Cs-137	.493	.0476		pCi/g	0-.33
SW TRANS-1	26-AUG-93	SURFACE SOILS	Cs-137	.672	.0841		pCi/g	0-.33
SW TRANS-2	26-AUG-93	SURFACE SOILS	Cs-137	1.15	.105		pCi/g	0-.33
SW TRANS-4	26-AUG-93	SURFACE SOILS	Cs-137	.536	.058		pCi/g	0-.33
USGS-91	26-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	23.4-25
USGS-91	26-MAY-93	RUBBLE ZONE	Cs-137			U	pCi/g	106-108
USGS-93	26-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	14-16
USGS-93	26-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	222.5-236
USGS-94	26-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	116.3-118
USGS-94	26-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	217-220.2
USGS-95	26-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	26.1-28

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft))
USGS-95	26-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	235.2-239
USGS-95	26-MAY-93	FRACT BASALT	Cs-137			U	pCi/g	96-114.4
10V (1)	01-SEP-94	SOIL	I-129	.17	.42	U	pCi/g	7-10
10V (1)	30-SEP-94	SOIL	I-129	.14	.38	U	pCi/g	98-124
2E (1)	25-AUG-94	SOIL	I-129	-.23	.4	U	pCi/g	11-16.5
2E (1)	03-NOV-94	SOIL	I-129	-.095	.27	U	pCi/g	97-101
3E (1)	25-AUG-94	SOIL	I-129	-.032	.37	U	pCi/g	3-5.5
3V (1)	20-SEP-94	SOIL	I-129	-.0051	.24	U	pCi/g	100-104
4E (1)	26-AUG-94	SOIL	I-129	.47	.36	U	pCi/g	10-22.5
4V (1)	19-AUG-94	SOIL	I-129	.11	.34	U	pCi/g	5-12
4V (1)	02-SEP-94	SOIL	I-129	.12	.3	U	pCi/g	105.2-118
5E (1)	15-SEP-94	SOIL	I-129	.36	.44	U	pCi/g	18-21
5E (1)	11-OCT-94	SOIL	I-129	.41	.31	U	pCi/g	98-104
5V (1)	26-AUG-94	SOIL	I-129	.42	.42	U	pCi/g	5-13
5V (1)	18-OCT-94	SOIL	I-129	.14	.42	U	pCi/g	99-102
6V (1)	17-AUG-94	SOIL	I-129	.21	.39	U	pCi/g	2-10
6V (1)	13-OCT-94	SOIL	I-129	-.54	.39	U	pCi/g	92-95
7V (1)	18-AUG-94	SOIL	I-129	0	.28	U	pCi/g	8-15

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
7V (1)	26-SEP-94	SOIL	I-129	.83	.37	J	pCi/g	85-92
8V (1)	18-AUG-94	SOIL	I-129	-.058	.5	U	pCi/g	6-11
8V (1)	12-SEP-94	SOIL	I-129	.3	.4	U	pCi/g	100-125
9V (1)	26-AUG-94	SOIL	I-129	.89	.48	U	pCi/g	15-21.5
76-1	25-MAY-93	FRACT BASALT	Pu-238	0	.1	UJ	pCi/g	109-110
76-1	25-MAY-93	RUBBLE ZONE	Pu-238	0	.1	UJ	pCi/g	204.9-205.9
76-2	25-MAY-93	RUBBLE ZONE	Pu-238	0	.2	UJ	pCi/g	78-79
76-2	25-MAY-93	FRACT BASALT	Pu-238	0	.1	UJ	pCi/g	220.8-221.5
76-2	25-MAY-93	MASS BASALT	Pu-238	0	.1	UJ	pCi/g	87-88
76-2	25-MAY-93	FRACT BASALT	Pu-238	0	.1	UJ	pCi/g	147-148
76-3	25-MAY-93	SED INTBED	Pu-238	0	.1	UJ	pCi/g	25.8-27.7
76-3	25-MAY-93	MASS BASALT	Pu-238	0	.1	UJ	pCi/g	215-215.8
76-3	25-MAY-93	FRACT BASALT	Pu-238	0	.2	UJ	pCi/g	94-95
76-4	25-MAY-93	SED INTBED	Pu-238	0	.1	UJ	pCi/g	98.6-101.1
76-4	25-MAY-93	SED INTBED	Pu-238	0	.1	UJ	pCi/g	20.5-23
76-4A	25-MAY-93	FRACT BASALT	Pu-238	0	.1	UJ	pCi/g	45-45.8
76-4A	25-MAY-93	SED INTBED	Pu-238	0	.1	UJ	pCi/g	97.8-100.2
76-4A	25-MAY-93	SED INTBED	Pu-238	0	.1	UJ	pCi/g	223.3-224.7

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
76-5	25-MAY-93	MASS BASALT	Pu-238	0	.1	UJ	pCi/g	45.1-46
76-5	25-MAY-93	FRACT BASALT	Pu-238	0	.1	UJ	pCi/g	48-49
77-2	25-MAY-93	RUBBLE ZONE	Pu-238	0	.1	UJ	pCi/g	25.5-26
77-2	25-MAY-93	FRACT BASALT	Pu-238	0	.1	UJ	pCi/g	199.5-200.3
77-2	25-MAY-93	FRACT BASALT	Pu-238	0	.1	UJ	pCi/g	72.6-73.5
78-1	25-MAY-93	RUBBLE ZONE	Pu-238	0	.1	UJ	pCi/g	23.6-24.5
78-1	25-MAY-93	RUBBLE ZONE	Pu-238	0	.1	U	pCi/g	66-66.8
78-2	25-MAY-93	RUBBLE ZONE	Pu-238	0	.1	UJ	pCi/g	32.8-33.4
78-2	25-MAY-93	SED INTBED	Pu-238	0	.1	UJ	pCi/g	226.3-230.1
78-2	25-MAY-93	RUBBLE ZONE	Pu-238	.2	.1	J	pCi/g	126.5-127.8
78-3	25-MAY-93	RUBBLE ZONE	Pu-238	0	.1	UJ	pCi/g	56.5-57.7
78-3	25-MAY-93	RUBBLE ZONE	Pu-238	0	.1	UJ	pCi/g	198.7-199.7
78-3	25-MAY-93	MASS BASALT	Pu-238	0	.1	UJ	pCi/g	122.4-123.3
78-5	25-MAY-93	RUBBLE ZONE	Pu-238	0	.1	UJ	pCi/g	65.5-66.8
78-5	25-MAY-93	MASS BASALT	Pu-238	0	.1	UJ	pCi/g	172.9-173.7
78-5	25-MAY-93	RUBBLE ZONE	Pu-238	0	.1	UJ	pCi/g	130.6-132
78-5	26-MAY-93	FRACT BASALT	Pu-238	.2	.1	UJ	pCi/g	220.3-224.7
79-2	26-MAY-93	FRACT BASALT	Pu-238	0	.1	UJ	pCi/g	27-29

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
79-2	26-MAY-93	FRACT BASALT	Pu-238	0	.1	UJ	pCi/g	70-70.6
79-2	26-MAY-93	MASS BASALT	Pu-238	0	.1	UJ	pCi/g	221.5-222.5
79-3	26-MAY-93	RUBBLE ZONE	Pu-238	0	.1	UJ	pCi/g	53.9-55
79-3	26-MAY-93	FRACT BASALT	Pu-238	0	.1	UJ	pCi/g	100.6-101.8
8801D	25-MAY-93	RUBBLE ZONE	Pu-238	0	.1	UJ	pCi/g	43.2-44.7
8801D	25-MAY-93	FRACT BASALT	Pu-238	0	.1	UJ	pCi/g	170.3-171.3
8801D	25-MAY-93	FRACT BASALT	Pu-238	0	.1	UJ	pCi/g	87-89
8802D	25-MAY-93	RUBBLE ZONE	Pu-238	0	.1	UJ	pCi/g	95-96
8901D	25-MAY-93	SED INTBED	Pu-238	0	.2	UJ	pCi/g	243.1-245.2
8901D	25-MAY-93	SED INTBED	Pu-238	0	.2	UJ	pCi/g	238.1-239.3
D-10	25-MAY-93	RUBBLE ZONE	Pu-238	.6	.4	R	pCi/g	152-153
D-10	25-MAY-93	FRACT BASALT	Pu-238	0	.1	UJ	pCi/g	220-221.5
D-10	25-MAY-93	RUBBLE ZONE	Pu-238	0	.1	UJ	pCi/g	194-196
RWMC 2-4	13-AUG-85	SURFACE SOIL	Pu-238	.05	.02		pCi/g	0-0.12
RWMC 2-4	13-AUG-85	SURFACE SOIL	Pu-238	.025	.019	U	pCi/g	0.12-0.33
USGS-91	26-MAY-93	FRACT BASALT	Pu-238	0	.1	UJ	pCi/g	23.4-25
USGS-91	26-MAY-93	RUBBLE ZONE	Pu-238	0	.1	UJ	pCi/g	106-108
USGS-93	26-MAY-93	FRACT BASALT	Pu-238	0	.1	UJ	pCi/g	14-16

: ERIS Soil Sample Radionuclide Concentrations

Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
ASALT	Pu-238	0	.1	UJ	pCi/g	222.5-236
ASALT	Pu-238	0	.1	UJ	pCi/g	116.3-118
ASALT	Pu-238	0	.1	UJ	pCi/g	217-220.2
ASALT	Pu-238	0	.1	UJ	pCi/g	26.1-28
ASALT	Pu-238	0	.1	UJ	pCi/g	96-114.4
ASALT	Pu-238	0	.1	UJ	pCi/g	235.2-239
ASALT	Pu-239/240	0	.1	U	pCi/g	109-110
ZONE	Pu-239/240	0	.1	U	pCi/g	204.9-205.9
ZONE	Pu-239/240	0	.2	UJ	pCi/g	78-79
ASALT	Pu-239/240	0	.1	U	pCi/g	147-148
ASALT	Pu-239/240	0	.1	U	pCi/g	220.8-221.5
SALT	Pu-239/240	0	.1	U	pCi/g	87-88
BED	Pu-239/240	0	.1	U	pCi/g	25.8-27.7
ASALT	Pu-239/240	0	.2	UJ	pCi/g	94-95
SALT	Pu-239/240	0	.1	U	pCi/g	215-215.8
BED	Pu-239/240	0	.02	U	pCi/g	98.6-101.1
BED	Pu-239/240	0	.1	U	pCi/g	20.5-23
ASALT	Pu-239/240	0	.1	U	pCi/g	45-45.8

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	Q Flags	Units	Depth Range (ft))
	UJ	pCi/g	222.5-236
	UJ	pCi/g	116.3-118
	UJ	pCi/g	217-220.2
	UJ	pCi/g	26.1-28
	UJ	pCi/g	96-114.4
	UJ	pCi/g	235.2-239
	U	pCi/g	109-110
	U	pCi/g	204.9-205.9
	UJ	pCi/g	78-79
	U	pCi/g	147-148
	U	pCi/g	220.8-221.5
	U	pCi/g	87-88
	U	pCi/g	25.8-27.7
	UJ	pCi/g	94-95
	U	pCi/g	215-215.8
	U	pCi/g	98.6-101.1
	U	pCi/g	20.5-23
	U	pCi/g	45-45.8

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
76-4A	25-MAY-93	SED INTBED	Pu-239/240	0	.1	U	pCi/g	223.3-224.7
76-4A	25-MAY-93	SED INTBED	Pu-239/240	0	.1	U	pCi/g	97.8-100.2
76-5	25-MAY-93	MASS BASALT	Pu-239/240	0	.1	U	pCi/g	45.1-46
76-5	25-MAY-93	FRACT BASALT	Pu-239/240	0	.1	UJ	pCi/g	48-49
77-2	25-MAY-93	RUBBLE ZONE	Pu-239/240	0	.2	U	pCi/g	25.5-26
77-2	25-MAY-93	FRACT BASALT	Pu-239/240	0	.1	U	pCi/g	72.6-73.5
77-2	25-MAY-93	FRACT BASALT	Pu-239/240	0	.1	U	pCi/g	199.5-200.3
78-1	25-MAY-93	RUBBLE ZONE	Pu-239/240	0	.1	U	pCi/g	23.6-24.5
78-1	25-MAY-93	RUBBLE ZONE	Pu-239/240	0	.1	U	pCi/g	66-66.8
78-2	25-MAY-93	RUBBLE ZONE	Pu-239/240	0	.1	U	pCi/g	32.8-33.4
78-2	25-MAY-93	SED INTBED	Pu-239/240	0	.1	U	pCi/g	226.3-230.1
78-2	25-MAY-93	RUBBLE ZONE	Pu-239/240	0	.1	U	pCi/g	126.5-127.8
78-3	25-MAY-93	RUBBLE ZONE	Pu-239/240	0	.1	U	pCi/g	56.5-57.7
78-3	25-MAY-93	MASS BASALT	Pu-239/240	0	.1	U	pCi/g	122.4-123.3
78-3	25-MAY-93	RUBBLE ZONE	Pu-239/240	0	.1	U	pCi/g	198.7-199.7
78-5	25-MAY-93	RUBBLE ZONE	Pu-239/240	0	.1	U	pCi/g	65.5-66.8
78-5	25-MAY-93	RUBBLE ZONE	Pu-239/240	0	.1	U	pCi/g	130.6-132
78-5	25-MAY-93	MASS BASALT	Pu-239/240	0	.1	U	pCi/g	172.9-173.7

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
78-5	26-MAY-93	FRACT BASALT	Pu-239/240	0	.1	U	pCi/g	220.3-224.7
79-2	26-MAY-93	FRACT BASALT	Pu-239/240	0	.2	U	pCi/g	27-29
79-2	26-MAY-93	FRACT BASALT	Pu-239/240	0	.02	U	pCi/g	70-70.6
79-2	26-MAY-93	MASS BASALT	Pu-239/240	0	.1	U	pCi/g	221.5-222.5
79-3	26-MAY-93	RUBBLE ZONE	Pu-239/240	0	.1	U	pCi/g	53.9-55
79-3	26-MAY-93	FRACT BASALT	Pu-239/240	0	.1	U	pCi/g	100.6-101.8
8801D	25-MAY-93	RUBBLE ZONE	Pu-239/240	0	.1	U	pCi/g	43.2-44.7
8801D	25-MAY-93	FRACT BASALT	Pu-239/240	0	.1	U	pCi/g	87-89
8801D	25-MAY-93	FRACT BASALT	Pu-239/240	0	.1	U	pCi/g	170.3-171.3
8802D	25-MAY-93	RUBBLE ZONE	Pu-239/240	0	.2	UJ	pCi/g	95-96
8901D	25-MAY-93	SED INTBED	Pu-239/240	0	.2	U	pCi/g	243.1-245.2
8901D	25-MAY-93	SED INTBED	Pu-239/240	0	.2	U	pCi/g	238.1-239.3
D-10	25-MAY-93	RUBBLE ZONE	Pu-239/240	0	.2	R	pCi/g	152-153
D-10	25-MAY-93	FRACT BASALT	Pu-239/240	0	.1	U	pCi/g	220-221.5
D-10	25-MAY-93	RUBBLE ZONE	Pu-239/240	0	.1	U	pCi/g	194-196
RWMC 2-4	13-AUG-85	SURFACE SOIL	Pu-239/240	.11	.03		pCi/g	0-0.12
RWMC 2-4	13-AUG-85	SURFACE SOIL	Pu-239/240	.09	.03		pCi/g	0.12-0.33
RWMC 2-4	13-AUG-85	SURFACE SOIL	Pu-239/240	.024	.018	U	pCi/g	0-0.12

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
USGS-91	26-MAY-93	FRACT BASALT	Pu-239/240	0	.1	U	pCi/g	23.4-25
USGS-91	26-MAY-93	RUBBLE ZONE	Pu-239/240	0	.1	U	pCi/g	106-108
USGS-93	26-MAY-93	FRACT BASALT	Pu-239/240	0	.1	U	pCi/g	14-16
USGS-93	26-MAY-93	FRACT BASALT	Pu-239/240	0	.1	U	pCi/g	222.5-236
USGS-94	26-MAY-93	FRACT BASALT	Pu-239/240	0	.1	U	pCi/g	116.3-118
USGS-94	26-MAY-93	FRACT BASALT	Pu-239/240	0	.1	U	pCi/g	217-220.2
USGS-95	26-MAY-93	FRACT BASALT	Pu-239/240	0	.1	U	pCi/g	26.1-28
USGS-95	26-MAY-93	FRACT BASALT	Pu-239/240	0	.1	U	pCi/g	96-114.4
USGS-95	26-MAY-93	FRACT BASALT	Pu-239/240	0	.1	U	pCi/g	235.2-239
10V (1)	01-SEP-94	SOIL	Sr-90	.35	.054		pCi/g	7-10
10V (1)	30-SEP-94	SOIL	Sr-90	.26	.062		pCi/g	98-124
2E (1)	25-AUG-94	SOIL	Sr-90	.13	.079	UJ	pCi/g	11-16.5
2E (1)	03-NOV-94	SOIL	Sr-90	.13	.05		pCi/g	97-101
3E (1)	25-AUG-94	SOIL	Sr-90	.24	.073	J	pCi/g	3-5.5
3V (1)	20-SEP-94	SOIL	Sr-90	.41	.076		pCi/g	100-104
4E (1)	26-AUG-94	SOIL	Sr-90	.92	.1		pCi/g	10-22.5
4V (1)	19-AUG-94	SOIL	Sr-90	.22	.07	J	pCi/g	5-12
4V (1)	02-SEP-94	SOIL	Sr-90	.19	.057		pCi/g	105.2-118

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
5E (1)	15-SEP-94	SOIL	Sr-90	.75	.088		pCi/g	18-21
5E (1)	11-OCT-94	SOIL	Sr-90	.25	.067		pCi/g	98-104
5V (1)	26-AUG-94	SOIL	Sr-90	.66	.12	J	pCi/g	5-13
5V (1)	18-OCT-94	SOIL	Sr-90	.031	.057	U	pCi/g	99-102
6V (1)	17-AUG-94	SOIL	Sr-90	1.9	.28	R	pCi/g	2-10
6V (1)	13-OCT-94	SOIL	Sr-90	.04	.055	U	pCi/g	92-95
76-1	25-MAY-93	FRACT BASALT	Sr-90	0	.2	U	pCi/g	109-110
76-1	25-MAY-93	RUBBLE ZONE	Sr-90	0	.2	U	pCi/g	204.9-205.9
76-2	25-MAY-93	RUBBLE ZONE	Sr-90	.1	.2	U	pCi/g	78-79
76-2	25-MAY-93	FRACT BASALT	Sr-90	.1	.1	U	pCi/g	147-148
76-2	25-MAY-93	FRACT BASALT	Sr-90	0	.2	U	pCi/g	220.8-221.5
76-2	25-MAY-93	MASS BASALT	Sr-90	0	.2	U	pCi/g	87-88
76-3	25-MAY-93	SED INTBED	Sr-90	0	.1	UJ	pCi/g	25.8-27.7
76-3	25-MAY-93	FRACT BASALT	Sr-90	0	.1	R	pCi/g	94-95
76-3	25-MAY-93	MASS BASALT	Sr-90	0	.2	U	pCi/g	215-215.8
76-4	25-MAY-93	SED INTBED	Sr-90	0	.2	U	pCi/g	98.6-101.1
76-4	25-MAY-93	SED INTBED	Sr-90	0	.3	U	pCi/g	20.5-23
76-4A	25-MAY-93	FRACT BASALT	Sr-90	0	.2	U	pCi/g	45-45.8

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
76-4A	25-MAY-93	SED INTBED	Sr-90	.1	.2	U	pCi/g	223.3-224.7
76-4A	25-MAY-93	SED INTBED	Sr-90	0	.1	U	pCi/g	97.8-100.2
76-5	25-MAY-93	MASS BASALT	Sr-90	0	.2	U	pCi/g	45.1-46
76-5	25-MAY-93	FRACT BASALT	Sr-90	.4	.2	U	pCi/g	48-49
77-2	25-MAY-93	RUBBLE ZONE	Sr-90	0	.2	U	pCi/g	25.5-26
77-2	25-MAY-93	FRACT BASALT	Sr-90	.1	.3	UJ	pCi/g	72.6-73.5
77-2	25-MAY-93	FRACT BASALT	Sr-90	0	.3	U	pCi/g	199.5-200.3
78-1	25-MAY-93	RUBBLE ZONE	Sr-90	0	.3	UJ	pCi/g	23.6-24.5
78-1	25-MAY-93	RUBBLE ZONE	Sr-90	0	.4	UJ	pCi/g	66-66.8
78-2	25-MAY-93	RUBBLE ZONE	Sr-90	0	.2	U	pCi/g	32.8-33.4
78-2	25-MAY-93	SED INTBED	Sr-90	0	.2	U	pCi/g	226.3-230.1
78-2	25-MAY-93	RUBBLE ZONE	Sr-90	.2	.2	U	pCi/g	126.5-127.8
78-3	25-MAY-93	RUBBLE ZONE	Sr-90	0	.2	U	pCi/g	56.5-57.7
78-3	25-MAY-93	MASS BASALT	Sr-90	0	.2	U	pCi/g	122.4-123.3
78-3	25-MAY-93	RUBBLE ZONE	Sr-90	0	.4	UJ	pCi/g	198.7-199.7
78-5	25-MAY-93	RUBBLE ZONE	Sr-90	0	.3	U	pCi/g	65.5-66.8
78-5	25-MAY-93	RUBBLE ZONE	Sr-90	.3	.4	UJ	pCi/g	130.6-132
78-5	25-MAY-93	MASS BASALT	Sr-90	0	.1	U	pCi/g	172.9-173.7

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft))
78-5	26-MAY-93	FRACT BASALT	Sr-90	.1	.2	U	pCi/g	220.3-224.7
79-2	26-MAY-93	FRACT BASALT	Sr-90	0	.5	UJ	pCi/g	27-29
79-2	26-MAY-93	FRACT BASALT	Sr-90	.4	.4	UJ	pCi/g	70-70.6
79-2	26-MAY-93	MASS BASALT	Sr-90	.1	.5	UJ	pCi/g	221.5-222.5
79-3	26-MAY-93	RUBBLE ZONE	Sr-90	0	.4	UJ	pCi/g	53.9-55
79-3	26-MAY-93	FRACT BASALT	Sr-90	.1	.1	U	pCi/g	100.6-101.8
7V (1)	18-AUG-94	MONITORING WELL	Sr-90	.28	.072	J	pCi/g	8-15
7V (1)	26-SEP-94	MONITORING WELL	Sr-90	-.064	.054	U	pCi/g	85-92
8801D	25-MAY-93	RUBBLE ZONE	Sr-90	0	.4	UJ	pCi/g	43.2-44.7
8801D	25-MAY-93	FRACT BASALT	Sr-90	.3	.1	U	pCi/g	170.3-171.3
8801D	25-MAY-93	FRACT BASALT	Sr-90	0	.6	R	pCi/g	87-89
8802D	25-MAY-93	RUBBLE ZONE	Sr-90	.1	.4	UJ	pCi/g	95-96
8901D	25-MAY-93	SED INTBED	Sr-90	.2	.3	U	pCi/g	243.1-245.2
8901D	25-MAY-93	SED INTBED	Sr-90	0	.3	U	pCi/g	238-1-239.3
8V (1)	18-AUG-94	SOIL	Sr-90	.6	.095	J	pCi/g	6-11
8V (1)	12-SEP-94	SOIL	Sr-90	.53	.088		pCi/g	100-125
9V (1)	26-AUG-94	SOIL	Sr-90	.32	.071	J	pCi/g	15-21.5

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft)
D-10	25-MAY-93	RUBBLE ZONE	Sr-90	0	.2	U	pCi/g	152-153
D-10	25-MAY-93	FRACT BASALT	Sr-90	0	.4	UJ	pCi/g	220-221.5
D-10	25-MAY-93	RUBBLE ZONE	Sr-90	0	.3	UJ	pCi/g	194-196
RWMC 2-4	13-AUG-85	SURFACE SOIL	Sr-90	.5	.3	U	pCi/g	0-0.12
RWMC 2-4	13-AUG-85	SURFACE SOIL	Sr-90	2.5	.4		pCi/g	0-0.12
RWMC 2-4	13-AUG-85	SURFACE SOIL	Sr-90	.7	.4	U	pCi/g	0.12-0.33
SW TRANSECT-1	26-AUG-93	SURFACE SOILS	Sr-90	-.3	.2	U	pCi/g	0-.33
USGS-91	26-MAY-93	FRACT BASALT	Sr-90	0	.5	R	pCi/g	23.4-25
USGS-91	26-MAY-93	RUBBLE ZONE	Sr-90	.3	.3	UJ	pCi/g	106-108
USGS-93	26-MAY-93	FRACT BASALT	Sr-90	.1	.2	U	pCi/g	14-16
USGS-93	26-MAY-93	FRACT BASALT	Sr-90	0	.2	U	pCi/g	222.5-236
USGS-94	26-MAY-93	FRACT BASALT	Sr-90	0	.1	U	pCi/g	116.3-118
USGS-94	26-MAY-93	FRACT BASALT	Sr-90	0	.1	U	pCi/g	217-220.2
USGS-95	26-MAY-93	FRACT BASALT	Sr-90	0	.5	R	pCi/g	26.1-28
USGS-95	26-MAY-93	FRACT BASALT	Sr-90	0	.2	U	pCi/g	235.2-239
USGS-95	26-MAY-93	FRACT BASALT	Sr-90	0	.2	U	pCi/g	96-114.4
10V (1)	01-SEP-94	SOIL	Tc-99	-.18	.099	U	pCi/g	7-10
10V (1)	30-SEP-94	SOIL	Tc-99	.11	.091	U	pCi/g	98-124

Table 6: ERIS Soil Sample Radionuclide Concentrations

Location	Date	Matrix	Nuclide	Conc.	Uncert.	Q Flags	Units	Depth Range (ft))
2E (1)	25-AUG-94	SOIL	Tc-99	.053	.095	U	pCi/g	11-16.5
2E (1)	03-NOV-94	SOIL	Tc-99	.012	.087	U	pCi/g	97-101
3E (1)	25-AUG-94	SOIL	Tc-99	.093	.11	U	pCi/g	3-5.5
3V (1)	20-SEP-94	SOIL	Tc-99	.12	.09	U	pCi/g	100-104
4E (1)	26-AUG-94	SOIL	Tc-99	.13	.095	U	pCi/g	10-22.5
4V (1)	19-AUG-94	SOIL	Tc-99	.15	.1	U	pCi/g	5-12
4V (1)	02-SEP-94	SOIL	Tc-99	-.029	.099	U	pCi/g	105.2-118
5E (1)	15-SEP-94	SOIL	Tc-99	-.29	.11	U	pCi/g	18-21
5E (1)	11-OCT-94	SOIL	Tc-99	.083	.092	U	pCi/g	98-104
5V (1)	26-AUG-94	SOIL	Tc-99	.28	.11		pCi/g	5-13
5V (1)	18-OCT-94	SOIL	Tc-99	.024	.089	U	pCi/g	99-102
6V (1)	17-AUG-94	SOIL	Tc-99	-.043	.099	U	pCi/g	2-10
6V (1)	13-OCT-94	SOIL	Tc-99	.054	.092	U	pCi/g	92-95
7V (1)	18-AUG-94	SOIL	Tc-99	.086	.097	U	pCi/g	8-15
7V (1)	26-SEP-94	SOIL	Tc-99	.22	.094		pCi/g	85-92
8V (1)	18-AUG-94	SOIL	Tc-99	-.093	.096	U	pCi/g	6-11
8V (1)	12-SEP-94	SOIL	Tc-99	.07	.087	U	pCi/g	100-125
9V (1)	26-AUG-94	SOIL	Tc-99	.21	.11	U	pCi/g	15-21.5

3.2 Environmental Restoration Summation of Radionuclide Transport Data prepared by Dames and Moore

The following table was compiled by Dames and Moore and gives a complete summarization of measured subsurface radionuclide concentrations in soils from all deep wells drilled inside and in the immediate vicinity of the SDA. Deep in this instance refers to wells drilled at least to the A-B (30') interbed. Samples from within the surficial sediments from these wells are also included in the table. This table does not include samples taken from drilling or sampling activities which only penetrated the surficial sediments to the underlying basalt. Those samples are presented in the following two subsections.

The complete reference for the following table is:

Dames and Moore, 1994, Compilation and Summarization of the Subsurface Disposal Area Radionuclide Transport Data at the Radioactive Waste Management Complex, Revision 3, EGG-ER-10546.

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	RESULT (nCi/g)	Am-241			Co-60			Cs-137			Pu-238		
					UNCERT.	EXP (nCi/g)	EXP	RESULT (nCi/g)	UNCERT. (nCi/g)	EXP	RESULT (nCi/g)	UNCERT. (nCi/g)	EXP	RESULT (nCi/g)	UNCERT. (nCi/g)	EXP
D02	D-13	1987	1.17 - 1.67	1.52	0.08	E-03	—	—	—	—	7.2	3.0	E-05	2.6	0.2	E-04
WELL 91		1972	1.87 - 2.17	—	—	—	ND	—	—	ND	—	—	—	—	—	—
WELL 91		1972	3.83 - 8.17	—	—	—	<2	—	—	E-05	<2	—	E-05	—	—	—
WELL 94		1972	5.00 - 6.67	—	—	—	<5	—	—	E-05	<4	—	E-05	—	—	—
WELL 92		1972	5.00 - 7.50	—	—	—	ND	—	—	—	ND	—	—	—	—	—
WELL 91		1972	7.83 - 8.92	—	—	—	ND	—	—	—	ND	—	—	—	—	—
D02	D-17	1987	9.17 - 9.67	0.3	1.2	E-06	—	—	—	—	1	8	E-06	6	0	E-07
WELL 96		1972	10.00 - 12.50	—	—	—	<6	—	—	E-05	<5	—	E-05	200	140	E-08
WELL 76-4	76-4-1	1978	12.00	—	0.0	1.0	E-06	2	2	E-05	1	2	E-05	0.1	0.0	E-06
WELL 93		1972	13.83 - 14.00	1200	300	E-08	<6	—	—	E-05	<4	—	E-05	20	30	E-08
D02	D-20	1987	15.50 - 16.00	5.0	0.5	E-05	—	—	—	—	10	7	E-06	1.49	0.18	E-05
WELL 76-2	76-2-1	1978	16.00	—	—	—	-2	3	E-05	3	3	E-05	5.7	5.6	E-08	
WELL 76-6	76-6-1	1978	17.10	—	-0.9	0.7	E-06	3	2	E-05	1	2	E-05	0.0	1.0	E-06
WELL 77-2	77-2-1	1978	19.20	—	2.0	2.0	E-06	4	4	E-05	2	6	E-05	3.0	2.0	E-06
WELL 76-4	76-4-2	1978	20.00	—	-0.2	0.9	E-06	1	2	E-05	1	2	E-05	0.0	0.6	E-06
WELL 95		1972	20.00 - 22.00	200	300	E-08	<10	—	—	E-05	<4	—	E-05	500	300	E-08
WELL 76-4	76-4-1A	1978	23.00	—	3.0	2.0	E-06	-2	2	E-05	0.4	2	E-05	-0.4	0.5	E-06
WELL 76-4A	76-4A-1	1978	23.50	—	21	3	E-06	0	2	E-05	-2	10	E-05	0.0	0.7	E-06
WELL 76-4A	76-4A-1	1978	23.50	—	-1.0	1.0	E-06	—	—	—	—	—	—	—	—	—
WELL 76-2	76-2-2	1978	24.00	—	—	—	0	4	E-05	5	4	E-05	7.3	6.9	E-06	
WELL 76-2	76-2-3	1978	24.30	—	—	—	-1	2	E-05	4	2	E-05	33.0	16.6	E-06	
WELL 76-3	76-3-1	1978	24.00 - 24.70	0.0	1.2	E-06	1	3	E-05	-7	4	E-05	0.0	1.1	E-06	
WELL 76-5	76-5-1	1978	25.40 - 26.00	0.6	1.0	E-06	2	2	E-05	2	2	E-05	2.5	1.5	E-06	
WELL 76-3	76-3-2	1978	25.80 - 26.80	1	2	E-06	8	3	E-05	-8	5	E-05	-0.1	1.2	E-06	
WELL 77-2	77-2-3	1978	25.80 - 27.70	-0.7	0.7	E-06	0	2	E-05	7	3	E-05	0.6	0.9	E-06	
WELL 77-2	77-2-2	1978	27.70	—	1.9	1.3	E-06	2	2	E-05	1	2	E-05	-0.4	0.7	E-06
WELL 76-1	76-1-2	1978	29.20	—	—	—	-0.1	3	E-05	7	8	E-05	-2.4	15.6	E-06	
WELL 76-1	76-1-1A	1978	31.30	—	-0.025	0.86	E-06	0	2	E-05	-2	2	E-05	0.2	0.8	E-06
WELL 96A	1	1975	34.80 - 35.10	-0.6	1.8	E-06	2	2	E-05	-5	3	E-05	0.6	1.1	E-06	
WELL 76-1	76-1-1	1978	35.10	—	—	—	2	4	E-05	10	6	E-05	0.3	15.8	E-08	
WELL 96B	3	1975	36.00	—	-1.5	1.4	E-06	-3	2	E-05	-1	3	E-05	-0.5	1.0	E-06
WELL 96B	2	1975	35.00 - 40.00	-0.9	1.6	E-06	-0.3	1.0	E-05	0	1	E-05	0.5	1.1	E-06	
D06A	D-29	1987	47.00 - 49.00	-2	9	E-07	—	—	—	—	5	2	E-05	1.5	1.2	E-08
WELL 76-2	76-2-4	1978	60.00	—	—	—	2	4	E-05	8	3	E-05	12.7	4.6	E-08	
WELL 76-2	76-2-4	1978	60.00	—	—	—	—	—	—	—	10	10	E-05	0.0	2.0	E-08
WELL 76-1	76-1-10	1978	70.00 - 75.00	—	—	—	0	3	E-05	-3	2	E-05	13	15.8	E-08	
WELL 76-5	76-5-2	1978	75.10	—	-1.0	1.0	E-06	2	2	E-05	2	2	E-05	2.0	2.0	E-08
WELL 93A	8	1975	80.20 - 80.60	0.4	1.6	E-06	2	2	E-05	4	2	E-05	0.5	1.5	E-08	
WELL 76-2	76-2-5	1978	82.50 - 83.50	—	—	—	0	4	E-05	-7	3	E-05	5.7	4.0	E-08	
WELL 93A	9	1975	82.80 - 83.60	-0.3	1.6	E-06	1	3	E-05	2	2	E-05	0.2	1.0	E-08	

Dashed lines indicate that item was unknown (Depth), not calculated (Uncertainty), or not analyzed for (Result).

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	Am-241			Co-60			Ca-137			Pu-238			
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP										
WELL 76-1	76-1-3	1976	84.70 - 86.30	—	—	—	0	7	E-05	0	4	E-05	2.3	4.8	E-06	
WELL 92		1972	88.50 - 90.00	100	150	E-06	<2	—	E-05	<2	—	E-05	580	300	E-08	
WELL 93A	10	1975	89.00 - 89.50	-0.8	1.6	E-06	2	2	E-05	-1	2	E-05	-0.4	1.0	E-06	
WELL 93		1972	88.25 - 90.33	500	200	E-06	<2	—	E-05	<5	—	E-05	300	300	E-08	
WELL 93		1972	88.25 - 90.33	200	100	E-06	<4	—	E-05	<4	—	E-05	—	—	—	
WELL 93		1972	88.25 - 90.33	—	—	—	<20	—	E-05	<20	—	E-05	—	—	—	
WELL 78-3	78-3-1A	1976	92.19	0.2	1.3	E-06	-3	2	E-05	3	2	E-05	-0.4	0.5	E-06	
WELL 78-3	78-3-1B	1976	92.19	-1.0	1.0	E-06	-5	2	E-05	1	2	E-05	-0.6	0.4	E-06	
WELL 76-1	76-1-5	1976	92.30	—	—	—	11	11	E-05	0	9	E-05	2.07	16.4	E-06	
WELL 76-1	76-1-4	1976	92.30 - 93.70	—	—	—	2	4	E-05	-7	3	E-05	1.7	5.5	E-06	
WELL 76-5	76-5-3	1976	95.90	1.0	1.0	E-06	2	2	E-05	1	2	E-05	2.0	2.0	E-06	
WELL 76-3	76-3-3	1976	96.50 - 96.80	0.3	1.4	E-06	0	3	E-05	-5	3	E-05	-0.1	1.2	E-06	
WELL 94		1972	95.92 - 98.42	—	—	—	ND	—	—	ND	—	—	—	—	—	—
WELL 76-3	76-3-4	1976	97.50 - 97.80	8.4	1.4	E-06	0	2	E-05	6	3	E-05	8.7	4.4	E-06	
WELL 76-3	76-3-4	1976	97.50 - 97.80	-1.0	1.0	E-06	—	—	—	—	—	—	—	—	—	—
WELL 76-4A	76-4A-2	1976	97.80	6.4	1.7	E-06	0	2	E-05	8	4	E-05	1.3	1.0	E-06	
WELL 76-4A	76-4A-2	1976	97.80	-0.0	1.0	E-06	—	—	—	—	—	—	—	—	—	—
WELL 76-4A	76-4A-2	1976	97.80	0.0	1.0	E-06	—	—	—	—	—	—	—	—	—	—
WELL 93A	11	1975	97.90 - 98.00	0.5	1.7	E-06	5	3	E-05	1	2	E-05	2.0	1.6	E-06	
WELL 78-2	78-2-1A	1976	98.39	-1.0	1.0	E-06	2	1	E-05	2.5	1.3	E-05	-0.4	0.4	E-06	
WELL 78-2	78-2-1B	1976	98.39	-0.57	1.2	E-06	-4	2	E-05	3	3	E-05	-0.9	0.7	E-06	
WELL 94		1972	95.92 - 102.00	20	30	E-06	<2	—	E-05	<2	—	E-05	200	300	E-08	
WELL 76-3	76-3-1A	1976	99.31	0.65	1.0	E-06	1	2	E-05	2	2	E-05	-0.038	0.77	E-06	
WELL 93		1972	98.00 - 101.00	—	—	—	6.2	1.2	E-05	10	2	E-05	760	150	E-08	
WELL 76-4	76-4-3	1976	99.50	0.5	0.8	E-06	2	2	E-05	4	2	E-05	0.5	0.9	E-06	
WELL 79-2	79-2-1A	1979	99.11 - 99.90	31.0	3.0	E-06	3	2	E-05	-4	2	E-05	2.1	0.9	E-06	
WELL 79-2	79-2-1B	1979	99.11 - 99.90	22.0	2.0	E-06	0.1	1.3	E-05	3	2	E-05	0.1	0.5	E-06	
WELL 76-4	76-4-2A	1978	99.51	0.4	1.0	E-06	-2	2	E-05	2	2	E-05	2.2	0.8	E-06	
WELL 78-2	78-2-2A	1978	99.51	-1.0	1.0	E-06	-2	3	E-05	-2	3	E-05	-0.6	0.9	E-06	
WELL 78-2	78-2-2B	1978	99.51	1.0	5.0	E-06	-5	3	E-05	2	3	E-05	0.2	0.5	E-06	
WELL 78-2	78-2-3A	1978	100.20	-0.3	0.9	E-06	-3	2	E-05	-1	2	E-05	0.1	0.5	E-06	
WELL 78-2	78-2-3B	1978	100.20	0.1	0.1	E-06	-4	2	E-05	-5	2	E-05	0.2	0.5	E-06	
WELL 76-5	76-5-1A	1978	100.39	1.0	1.0	E-06	3	2	E-05	2	2	E-05	-0.016	0.72	E-06	
WELL 96		1972	100.50 - 101.00	1000	700	E-06	<2	—	E-05	<4	—	E-05	590	150	E-08	
WELL 93A	12	1975	100.60 - 100.90	-0.8	1.6	E-06	1	2	E-05	-1	2	E-05	2.0	1.5	E-06	
WELL 79-2	79-2-2A	1979	99.90 - 101.71	13.0	3.0	E-06	0.3	1.3	E-05	2	2	E-05	0.9	0.7	E-06	
WELL 79-2	79-2-2B	1979	99.90 - 101.71	18.0	2.0	E-06	0.1	2.1	E-05	-3	3	E-05	0.9	0.7	E-06	
TW1	D-42	1987	101.00 - 101.17	4.4	0.2	E-04	—	—	—	—	—	—	1.7	0.2	E-05	
TW1	D-42	1987	101.00 - 101.17	4.7	0.2	E-04	—	—	—	—	—	—	1.18	0.17	E-05	

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	Am-241			Co-60			Cs-137			Pu-238		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP									
TW1	D-43A	1987	101.17	1.03	0.08	E-04	—	—	—	—	—	—	4.6	1.4	E-06
TW1	D-43A	1987	101.17	1.06	0.09	E-04	—	—	—	—	—	—	6.3	1.7	E-06
TW1	D-43A	1987	101.17	1.37	0.11	E-04	—	—	—	—	—	—	6.5	1.6	E-06
TW1	D-43A	1987	101.17	9.08	0.075	E-04	—	—	—	—	—	—	ND	—	—
TW1	D-43A	1987	101.17	1.07	0.09	E-04	—	—	—	—	—	—	3.9	1.3	E-06
TW1	D-43A	1987	101.17	8.47	0.95	E-05	—	—	—	—	—	—	10	3	E-06
WELL 76-5	76-5-2A	1978	101.61	0.47	1.0	E-06	-4	2	E-05	-4	3	E-05	0.065	0.9	E-06
WELL 78-5	78-5-1A	1978	101.71	2.0	1.0	E-06	-2	2	E-05	4	2	E-05	3.1	1.0	E-06
WELL 78-5	78-5-1B	1978	101.71	-1.0	0.7	E-06	-5	2	E-05	3	2	E-05	1.7	0.8	E-06
WELL 96B	4	1975	101.80 - 102.00	-1.2	1.5	E-06	-3	2	E-05	-2	3	E-05	0.0	1.1	E-06
WELL 93		1972	101.00 - 103.00	6300	1000	E-08	<3	—	E-05	<5	—	E-05	860	300	E-08
WELL 93		1972	101.00 - 103.00	15000	2000	E-08	—	—	—	—	—	—	1400	300	E-08
WELL 76-8	76-8-2	1976	102.10	-1.4	1.5	E-06	-2	2	E-05	3	2	E-05	3.0	2.0	E-06
WELL 79-2	79-2-3A	1979	101.71 - 102.99	24.0	3.0	E-06	2	2	E-05	-1	2	E-05	0.9	0.7	E-06
WELL 79-2	79-2-3B	1979	101.71 - 102.99	20.0	3.0	E-06	-1	2	E-05	5	2	E-05	1.2	0.7	E-06
WELL 79-2	79-2-4A	1979	101.71 - 102.99	-0.3	1.0	E-06	-1	2	E-05	2	2	E-05	-0.0	0.5	E-06
WELL 79-2	79-2-4B	1979	101.71 - 102.99	-0.4	1.0	E-06	5.2	1.7	E-05	-1	2	E-05	0.7	0.7	E-06
WELL 83A	13	1975	102.40 - 102.80	-1.6	1.6	E-06	1	2	E-05	-2	2	E-05	0.6	1.2	E-06
WELL 79-3	79-3-1A	1979	100.89 - 106.20	2.0	2.0	E-06	28.0	2.0	E-05	2	2	E-05	-0.0	0.5	E-06
WELL 79-3	79-3-1B	1979	100.69 - 106.20	0.5	1.2	E-06	25.0	2.0	E-05	-2	2	E-05	-0.0	0.6	E-06
WELL 78-2	78-2-4A	1978	103.61	0.0043	0.8	E-06	-2	2	E-05	-3	2	E-05	-0.6	0.3	E-06
WELL 78-2	78-2-4B	1978	103.61	1.0	0.9	E-06	-4	2	E-05	-2	2	E-05	0.7	0.8	E-06
WELL 76-1	76-1-6	1976	103.00 - 104.50	—	—	—	4	4	E-05	-1	5	E-05	9.9	7.1	E-06
WELL 85		1972	103.08 - 104.58	90	140	E-08	<5	—	E-05	—	—	—	500	450	E-08
WELL 85		1972	103.08 - 104.58	—	—	—	<10	—	E-05	<4	—	E-04	—	—	—
WELL 83		1972	103.00 - 105.00	4500	400	E-08	<30	—	E-05	<90	—	E-05	—	—	—
WELL 98		1972	103.17 - 104.69	90	140	E-08	—	—	—	<4	—	E-05	500	450	E-08
WELL 76-3	76-3-2A	1978	104.49	0.6	0.9	E-06	-2	3	E-05	7	4	E-05	-0.03	0.78	E-06
WELL 78-5	78-5-2A	1978	106.20	0.6	0.9	E-06	-3	3	E-05	-1	3	E-05	0.3	0.5	E-06
WELL 78-5	78-5-2B	1978	106.20	0.5	0.9	E-06	-3	3	E-05	-2	3	E-05	0.2	0.9	E-06
WELL 76-3	76-3-3A	1978	106.30	0.2	0.7	E-06	0	2	E-05	-1	1	E-05	0.1	0.4	E-06
WELL 88		1971	105.00 - 108.00	—	—	—	ND	—	—	ND	—	—	—	—	—
WELL 76-5	76-5-3A	1978	106.59	0.4	0.8	E-06	-1	2	E-05	3	2	E-05	-0.005	0.4	E-06
WELL 96B	5	1975	106.40 - 106.80	-0.7	1.6	E-06	2	2	E-05	1	2	E-05	0.7	1.1	E-06
WELL 76-5	76-5-4A	1978	108.50	0.5	0.8	E-06	2	2	E-05	-5	2	E-05	0.01	0.61	E-06
WELL 78-5	78-5-3A	1978	110.20	7.0	4.0	E-06	4	3	E-05	4	2	E-05	0.13	0.65	E-06
WELL 78-5	78-5-3B	1978	110.20	1.0	1.0	E-06	-3	3	E-05	-10	4	E-05	0.2	0.5	E-06
WELL 90		1971	108.00 - 113.00	—	—	—	<3	—	E-05	<3	—	E-05	—	—	—
WELL 76-3	76-3-5	1976	110.50 - 111.00	2.7	1.2	E-06	2	3	E-05	1	5	E-05	1.0	1.2	E-06
WELL 96		1972	111.00 - 111.50	<90	—	E-06	<5	—	E-05	<5	—	E-05	—	—	—

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	Am-241			Co-60			Ca-137			Pu-238		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP									
WELL 96		1972	110.00 - 112.92	3000	600	E-08	<4	—	E-05	<4	—	E-05	900	200	E-08
WELL 96		1972	110.00 - 112.92	2300	2000	E-08	<2	—	E-05	<3	—	E-05	300	150	E-08
WELL 88		1971	111.00 - 112.50	400	300	E-08	<6	—	E-05	<5	—	E-05	<3000	—	E-08
WELL 78-5	78-5-4A	1978	112.40	0.3	0.9	E-08	4	2	E-05	1	2	E-05	-0.2	0.5	E-08
WELL 78-5	78-5-4B	1978	112.40	0.84	1.1	E-08	0	2	E-05	-1	2	E-05	-0.059	0.45	E-08
WELL 89		1971	110.00 - 115.00	90	140	E-08	<4	—	E-05	<4	—	E-05	<200	—	E-08
WELL 95		1972	112.00 - 113.33	300	450	E-08	<3	—	E-05	22	1	E-05	50	80	E-08
WELL 78-3	78-3-4A	1978	114.01	0.1	1.0	E-08	3	2	E-05	1	2	E-05	-0.6	0.5	E-08
WELL 78-5	78-5-5	1978	114.30 - 114.80	0.0	1.0	E-08	1	2	E-05	-1	2	E-05	0.8	0.9	E-08
WELL 78-5	78-5-5A	1978	114.80	-0.88	1.2	E-08	-4	3	E-05	4	2	E-05	0.2	0.7	E-08
WELL 78-3	78-3-5A	1978	116.01	-0.2	0.1	E-08	-1	2	E-05	2	4	E-05	-0.024	0.45	E-08
WELL 79-1	79-1-1A	1979	114.80 - 121.19	4.0	2.0	E-08	-5	2	E-05	8	2	E-05	0.2	0.5	E-08
WELL 79-1	79-1-1B	1979	114.80 - 121.19	1.6	1.2	E-08	2	2	E-05	0.2	1.5	E-05	0.0	0.6	E-08
WELL 78-3	78-3-6	1978	119.50 - 119.70	—	—	—	6	4	E-05	4	4	E-05	26.3	17	E-08
WELL 79-1	79-1-2A	1979	121.59 - 123.39	-0.5	0.8	E-08	-3	2	E-05	8	2	E-05	-0.0	0.5	E-08
WELL 79-1	79-1-2B	1979	121.59 - 123.39	0.2	1.2	E-08	-4	4	E-05	3	4	E-05	0.0	0.5	E-08
WELL 98		1972	122.75 - 124.75	500	300	E-08	<7	—	E-05	55	4	E-05	200	150	E-08
WELL 98		1972	124.00 - 124.25	300	450	E-08	<9	—	E-05	<9	—	E-05	—	—	E-08
WELL 79-1	79-1-3A	1979	129.20 - 131.79	0.2	0.5	E-08	-5	3	E-05	-7	2	E-05	0.2	0.5	E-08
WELL 79-1	79-1-3B	1979	129.20 - 131.79	1.1	1.3	E-08	-3	2	E-05	-2	3	E-05	-0.0	0.5	E-08
WELL 79-1	79-1-4A	1979	131.79 - 133.79	0.2	0.9	E-08	2	2	E-05	3	3	E-05	0.0	0.5	E-08
WELL 79-1	79-1-4B	1979	131.79 - 133.79	2.3	1.2	E-08	5	3	E-05	0.3	3.0	E-05	-0.2	0.9	E-08
WELL 79-1	79-1-5A	1979	135.30 - 137.50	-0.4	1.2	E-08	3	2	E-05	-2	2	E-05	0.4	0.6	E-08
WELL 79-1	79-1-5B	1979	135.30 - 137.50	-1.1	0.9	E-08	2	2	E-05	-3	2	E-05	0.0	0.5	E-08
WELL 79-1	79-1-6A	1979	137.50 - 139.70	-0.6	1.4	E-08	-9	2	E-05	-7	3	E-05	-0.0	0.5	E-08
WELL 79-1	79-1-6B	1979	137.50 - 139.70	1.1	1.1	E-08	-5	2	E-05	-4	2	E-05	0.3	0.6	E-08
WELL 79-1	79-1-7A	1979	139.70 - 141.70	-0.0	2.0	E-08	0.8	1.3	E-05	6	2	E-05	-0.0	0.5	E-08
WELL 79-1	79-1-7B	1979	139.70 - 141.70	0.9	1.3	E-08	0.8	2.0	E-05	-3	3	E-05	0.2	0.6	E-08
WELL 76-1	76-1-7	1978	217.20	—	—	—	0	2	E-05	0	4	E-05	10.7	4.2	E-08
WELL 76-1	76-1-7	1978	217.30	—	—	—	—	—	—	—	—	—	0.0	1.0	E-08
WELL 92		1972	218.00 - 220.50	540	450	E-08	<1	—	E-05	<10	—	E-05	200	300	E-08
WELL 76-1	76-1-8	1978	221.00	—	—	—	-2	2	E-05	1	2	E-05	6.3	16.4	E-08
WELL 96B	6	1975	220.90 - 221.20	0.6	1.5	E-08	2	2	E-05	1	2	E-05	0.4	1.4	E-08
WELL 78-3	78-3-7	1978	222.50	—	—	—	3	3	E-05	3	3	E-05	23.7	15.8	E-08
WELL 93A	14	1975	221.50 - 223.50	-0.6	1.6	E-08	2	2	E-05	2	2	E-05	-0.4	1.0	E-08
WELL 96		1972	221.58 - 224.08	600	300	E-08	<3	—	E-05	<4	—	E-05	100	300	E-08
WELL 76-2	76-2-8	1978	223.00	—	—	—	1	2	E-05	5	3	E-05	5.9	15.6	E-08
WELL 78-4A	78-4A-3	1978	223.50	0.0	1.0	E-08	1	2	E-05	0	3	E-05	0.7	0.9	E-08
WELL 76-5	76-5-4	1978	223.70	-1.0	1.0	E-08	2	2	E-05	2	2	E-05	0.8	0.7	E-08
WELL 96B	7	1975	223.60 - 223.90	1.5	1.8	E-08	2	2	E-05	2	2	E-05	0.6	1.1	E-08

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	Am-241			Co-60			Cs-137			Pu-238		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP									
WELL 78-3	78-3-2A	1978	223.79	-1.0	1.0	E-06	-3	2	E-05	2	2	E-05	0.6	0.6	E-06
WELL 78-3	78-3-2B	1978	223.79	0.94	1.2	E-06	-3	3	E-05	0	2	E-05	-0.8	0.6	E-06
D02	D-30	1987	223.83 - 224.33	-0.1	1.0	E-06	—	—	—	-2	8	E-06	1.3	1.3	E-06
WELL 76-1	76-1-2A	1978	224.21	-0.34	1.2	E-06	-3	5	E-05	-2	5	E-05	-0.023	1.2	E-06
WELL 92		1972	223.00 - 225.50	200	150	E-06	23	2	E-05	13	0.3	E-05	300	300	E-08
WELL 76-5	76-5-6A	1978	225.20	0.1	0.8	E-06	-2	2	E-05	-1	2	E-05	0.027	0.45	E-06
D02	D-31	1987	224.33 - 226.33	0.0	1.2	E-06	—	—	—	4	7	E-06	2.6	1.1	E-06
WELL 76-2	76-2-1A	1978	225.39	-0.57	1.0	E-06	-3	3	E-05	0	1.4	E-05	-0.009	0.63	E-06
TW1	D-47	1987	225.75 - 225.92	2	9	E-07	—	—	—	—	—	—	-4	6	E-07
TW1	D-47	1987	225.75 - 225.92	0.5	1.0	E-06	—	—	—	—	—	—	7	7	E-07
WELL 76-3	76-3-6A	1978	225.98	-1.4	0.9	E-06	0	2	E-05	0	2	E-05	1.5	0.9	E-06
WELL 76-4A	76-4A-4	1978	226.00	23	3	E-06	2	2	E-05	2	3	E-05	1.0	1.0	E-06
WELL 76-4A	76-4A-4	1978	226.00	2.3	1.5	E-06	—	—	—	—	—	—	—	—	—
WELL 76-4A	76-4A-4	1978	226.00	-1.0	1.0	E-06	—	—	—	—	—	—	—	—	—
WELL 76-1	76-1-3A	1978	226.41	-0.30	1.3	E-06	-2	3	E-05	-3	4	E-05	-0.005	0.72	E-06
WELL 94		1972	226.25 - 226.75	400	200	E-06	<2	—	E-05	<3	—	E-05	900	700	E-08
WELL 78-5	78-5-5A	1978	226.51	0.53	2.4	E-06	-2	2	E-05	0	3	E-05	0.048	0.18	E-06
WELL 78-5	78-5-5B	1978	226.51	2.0	3.0	E-06	-4	3	E-05	5	3	E-05	0.8	0.9	E-06
WELL 93A	15	1975	226.50 - 226.90	0.1	1.6	E-06	-5	2	E-05	-2	3	E-05	-0.3	1.0	E-06
WELL 78-3	78-3-3A	1978	226.90	-0.34	1.3	E-06	0	3	E-05	0	3	E-05	-0.07	0.32	E-06
WELL 78-3	78-3-3B	1978	226.90	0.48	1.0	E-06	-6	3	E-05	7	2	E-05	-1.0	0.5	E-08
WELL 76-2	76-2-2A	1978	227.00	0.074	0.94	E-06	0.4	2	E-05	3	2	E-05	-0.8	0.7	E-06
TW1	D-48	1987	226.83 - 227.58	1.2	1.4	E-06	—	—	—	3	1.6	E-05	0.8	1.1	E-06
TW1	D-48	1987	226.83 - 227.58	0.7	1.1	E-06	—	—	—	—	—	—	5	9	E-07
TW1	D-48	1987	226.83 - 227.58	0.8	1.2	E-06	—	—	—	—	—	—	6	7	E-07
WELL 93		1972	226.25 - 228.75	400	200	E-06	<3	—	E-05	<20	—	E-05	300	300	E-08
WELL 76-1	76-1-4A	1978	227.79	0.38	1.1	E-06	-5	3	E-05	-4	4	E-05	0.6	0.7	E-06
WELL 96		1972	226.58 - 229.25	100	450	E-06	<20	—	E-05	<20	—	E-05	20	30	E-08
WELL 76-4A	76-4A-1A	1978	227.99	0.033	0.93	E-06	-5	3	E-05	-5	4	E-05	0.1	1.0	E-06
WELL 95		1972	226.75 - 229.25	300	300	E-06	24	3	E-05	23	3	E-05	900	700	E-08
WELL 76-1	76-1-9	1978	228.30	2.0	1.6	E-06	4	3	E-05	-5	4	E-05	3.3	15.4	E-06
WELL 76-1	76-1-5A	1978	228.31	0.37	1.0	E-06	0.9	2	E-05	1	2	E-05	-0.1	0.9	E-06
WELL 76-3	76-3-8	1978	228.50	—	—	—	2	3	E-05	1	3	E-05	19.3	15.7	E-06
D02	D-34A	1987	229.67 - 230.00	—	—	—	—	—	—	—	—	—	2.4	0.7	E-06
D02	D-34A	1987	229.67 - 230.00	—	—	—	—	—	—	—	—	—	1.3	1.1	E-06
D02	D-34A	1987	229.67 - 230.00	—	—	—	—	—	—	—	—	—	1.4	1.1	E-06
WELL 76-5	78-5-6A	1978	230.09	-0.91	1.2	E-06	1	2	E-05	-4	3	E-05	-0.9	0.9	E-06
WELL 76-5	78-5-6B	1978	230.09	2.0	1.0	E-06	-5	2	E-05	1	2	E-05	0.7	0.7	E-06
D02	D-34	1987	230.00 - 230.33	0.3	1.3	E-06	—	—	—	-0	7	E-06	6.5	1.9	E-06
D02	D-34	1987	230.00 - 230.33	—	—	—	—	—	—	—	—	—	3.22	0.17	E-05

Dashed lines indicate that item was unknown (Depth), not calculated (Uncertainty), or not analyzed for (Result).

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	Am-241			Co-60			Cs-137			Pu-238		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP									
D02	D-34	1987	230.00 - 230.33	—	—	—	—	—	—	—	—	—	1.5	0.4	E-06
D02	D-34	1987	230.00 - 230.33	—	—	—	—	—	—	—	—	—	3.3	0.8	E-06
WELL 78-5	78-5-7A	1978	230.31	1.1	1.0	E-06	0.4	2	E-05	1	2	E-05	-0.4	0.5	E-06
WELL 78-3	78-3-4A	1978	230.31	0.2	0.9	E-06	1	3	E-05	4	3	E-05	0.9	0.7	E-06
WELL 78-3	78-3-4B	1978	230.31	-0.53	1.0	E-06	-9	3	E-05	1	3	E-05	1.2	0.8	E-06
WELL 78-4A	78-4A-2A	1978	230.81	1.0	1.0	E-06	-8	4	E-05	2	2	E-05	-0.9	0.6	E-06
WELL 78-2	78-2-5A	1978	231.79	-1.0	1.0	E-06	-3	2	E-05	4	2	E-05	-0.9	0.8	E-06
WELL 78-2	78-2-5B	1978	231.79	-0.26	1.3	E-06	-7	2	E-05	1	2	E-05	-0.034	0.57	E-06
WELL 79-1	79-1-8A	1979	231.10 - 232.61	-1.0	0.9	E-06	2	2	E-05	-3	2	E-05	-0.0	0.5	E-06
WELL 79-1	79-1-8B	1979	231.10 - 232.61	2.4	1.3	E-06	-6	1.8	E-05	2	2	E-05	-0.3	0.5	E-06
WELL 79-1	79-1-9A	1979	231.10 - 232.61	0.3	1.2	E-06	-1	2	E-05	-0.6	2.1	E-05	0.2	0.6	E-06
WELL 79-1	79-1-9B	1979	231.10 - 232.61	2.0	2.0	E-06	3	2	E-05	-0.3	1.4	E-05	0.2	0.5	E-06
WELL 87		1971	231.17 - 233.00	<225	—	E-06	<6	—	E-05	<5	—	E-05	<360	—	E-08
WELL 78-3	78-3-7A	1978	232.32	10	10	E-06	-4	3	E-05	2	3	E-05	-0.4	0.6	E-06
D02	D-35	1987	232.25 - 232.58	-0.2	1.2	E-06	—	—	—	7	7	E-06	1.6	1.7	E-06
WELL 78-8	78-8-3	1978	232.20 - 233.20	0.0	2.0	E-06	4	3	E-05	-2	3	E-05	2.9	1.4	E-06
WELL 78-8	78-8-3	1978	232.20 - 233.20	—	—	—	—	—	—	—	—	—	0.0	1.0	E-06
WELL 78-5	78-5-7A	1978	232.91	-0.75	1.5	E-06	-3	2	E-05	5	2	E-05	-0.9	0.7	E-06
WELL 78-5	78-5-7B	1978	232.91	0.82	2.2	E-06	3	2	E-05	1	2	E-05	-0.049	0.83	E-06
WELL 78-2	78-2-3A	1978	233.40	1.3	1.0	E-06	0.6	2	E-05	-1	2	E-05	-0.6	0.7	E-06
WELL 78-4A	78-4A-3A	1978	233.40	0.018	0.94	E-06	0	2	E-05	-2	2	E-05	0.2	0.7	E-06
WELL 87		1971	233.00 - 234.50	270	300	E-08	<5	—	E-05	<5	—	E-05	180	210	E-08
D02	D-36	1987	233.75 - 234.17	-0.3	1.2	E-06	—	—	—	0	6	E-06	1.8	1.5	E-06
WELL 95		1972	233.25 - 235.17	50	300	E-08	<5	—	E-05	<5	—	E-05	100	300	E-08
WELL 91		1972	234.00 - 234.50	—	—	—	ND	—	—	ND	—	—	—	—	—
WELL 78-5	78-5-8A	1978	234.28	1.4	1.0	E-06	-1	2	E-05	4	2	E-05	0.3	0.6	E-06
WELL 78-8	78-6-1A	1978	234.71	-0.003	0.92	E-06	-8	3	E-05	-1	3	E-05	-0.3	0.9	E-06
WELL 78-3	78-3-8A	1978	234.91	0.36	1.2	E-06	1	1	E-05	0.5	2	E-05	-0.45	0.45	E-06
D02	D-37	1987	234.75 - 235.17	0.2	1.4	E-06	—	—	—	1.3	0.7	E-05	1.4	1.1	E-06
WELL 91		1972	233.75 - 236.25	1200	450	E-08	<3	—	E-05	<3	—	E-05	300	150	E-08
WELL 78-2	78-2-7	1978	235.00	—	—	—	-3	4	E-05	-5	5	E-05	1.8	15.7	E-08
WELL 78-2	78-2-4A	1978	235.20	0.9	1.0	E-06	3	2	E-05	-1	2	E-05	0.3	0.5	E-06
WELL 78-3	78-3-5A	1978	235.60	-0.65	1.3	E-06	2	2	E-05	1	2	E-05	2.0	1.0	E-06
WELL 78-3	78-3-5B	1978	235.60	-0.23	1.4	E-06	-2	3	E-05	-12	4	E-05	2.0	3.0	E-06
WELL 78-2	78-2-6A	1978	235.70	33.0	3.0	E-06	-1	2	E-05	-1	2	E-05	2.0	2.0	E-06
WELL 78-2	78-2-6B	1978	235.70	-0.31	1.3	E-06	-3	2	E-05	2	2	E-05	0.4	0.7	E-06
WELL 79-3	79-3-2A	1979	235.01 - 236.91	-0.0	0.9	E-06	-2	2	E-05	0.5	2.0	E-05	0.2	0.6	E-06
WELL 79-3	79-3-2B	1979	235.01 - 236.91	-0.6	0.9	E-06	2.7	1.3	E-05	-3	3	E-05	-0.5	0.5	E-06
WELL 78-8	78-6-2A	1978	236.29	0.5	0.9	E-06	-1	3	E-05	2	2	E-05	0.2	0.5	E-06
WELL 78-8	78-6-4	1978	236.30	0.0	2.0	E-06	1	2	E-05	1	2	E-05	-0.2	0.8	E-06

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	Am-241			Co-60			Cs-137			Pu-238		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP									
WELL 76-4A	76-4A-4A	1978	236.38	0.58	1.2	E-06	0	2	E-05	<1	2	E-05	1.1	0.7	E-06
WELL 91		1972	236.50 - 237.00	—	—	—	ND	—	—	ND	—	—	—	—	—
WELL 91		1972	236.25 - 238.75	90	140	E-08	<3	—	E-05	<3	—	E-05	720	450	E-08
WELL 91		1972	238.00	20	50	E-08	<90	—	E-05	<4.5	—	E-05	—	—	—
WELL 78-2	78-2-7A	1978	238.39	0.4	0.7	E-06	-3	2	E-05	-6	3	E-05	-0.013	0.48	E-06
WELL 78-2	78-2-7B	1978	238.39	0.7	0.9	E-06	-2	3	E-05	-10	4	E-05	0.2	0.8	E-06
WELL 78-3	78-3-6A	1978	238.71	0.6	0.7	E-06	-5	2	E-05	-1	3	E-05	-0.022	0.95	E-06
WELL 78-3	78-3-6B	1978	238.71	0.2	0.8	E-06	-1	3	E-05	-0.4	3	E-05	1.0	1.0	E-06
WELL 78-2	78-2-5A	1978	239.40	-0.001	0.69	E-06	0	2	E-05	-5	3	E-05	-0.3	0.6	E-06
WELL 78-4A	78-4A-5A	1978	239.60	1.2	0.9	E-06	-7	4	E-05	1	3	E-05	0.2	0.8	E-06
WELL 78-3	78-3-9A	1978	239.90	-0.3	0.6	E-06	-5	2	E-05	-4	2	E-05	0.005	0.53	E-06
WELL 78-5	78-5-8A	1978	240.29	0.44	1.1	E-06	4	3	E-05	-3	3	E-05	-0.9	0.7	E-06
WELL 78-5	78-5-8B	1978	240.29	3.0	4.0	E-06	3	3	E-05	4	3	E-05	3.0	1.0	E-06
WELL 78-3	78-3-9	1978	240.40	—	—	—	9	5	E-05	2	3	E-05	1.3	4.5	E-06
WELL 79-1	79-1-10A	1979	237.50 - 244.00	0.7	1.1	E-06	-4	2	E-05	-2	2	E-05	-0.0	0.5	E-06
WELL 79-1	79-1-10B	1979	237.50 - 244.00	0.3	1.3	E-06	-8	2	E-05	1	2	E-05	0.4	0.7	E-06
WELL 79-3	79-3-3A	1979	240.58 - 242.49	0.1	0.9	E-06	-5	3	E-05	-7	4	E-05	0.0	2.0	E-06
WELL 79-3	79-3-3B	1979	240.58 - 242.49	-0.5	0.8	E-06	5.1	2.4	E-05	2.1	1.6	E-05	0.1	0.5	E-06
WELL 78-4A	78-4A-6A	1978	242.19	0.4	0.8	E-06	-1	3	E-05	-2	4	E-05	0.2	0.7	E-06
WELL 78-5	78-5-9A	1978	242.19	-0.8	0.8	E-06	4	2	E-05	-2	2	E-05	-0.7	0.6	E-06
WELL 89		1971	241.58 - 243.17	200	300	E-08	<3	—	E-05	4	1	E-05	<100	—	E-08
WELL 78-3	78-3-7A	1978	242.39	0.9	0.9	E-06	-1	3	E-05	2	3	E-05	-0.021	0.46	E-06
WELL 78-3	78-3-7B	1978	242.39	2.0	1.0	E-06	-3	3	E-05	3	3	E-05	-0.7	0.6	E-06
WELL 78-2	78-2-6A	1978	242.68	-0.0	0.1	E-06	-3	3	E-05	-3	3	E-05	2.0	1.0	E-06
WELL 78-2	78-2-8A	1978	243.11	10.0	10.0	E-06	-6	3	E-05	3	2	E-05	-0.8	0.4	E-06
WELL 78-2	78-2-8B	1978	243.11	0.9	10.0	E-06	-3	3	E-05	-13	4	E-05	0.6	0.7	E-06
WELL 79-3	79-3-4A	1979	242.49 - 244.29	1.1	1.1	E-06	-3	2	E-05	6	3	E-05	0.0	0.5	E-06
WELL 79-3	79-3-4B	1979	242.49 - 244.29	-0.9	1.0	E-06	0	2	E-05	-0.8	2.0	E-05	0.4	0.8	E-06
WELL 78-4A	78-4A-7A	1978	243.41	-0.1	0.7	E-06	0	2	E-05	1	2	E-05	0.8	0.8	E-06
WELL 91		1972	243.17 - 243.83	—	—	—	ND	—	—	ND	—	—	—	—	—
WELL 78-2	78-2-8	1978	243.90	—	—	—	6	4	E-05	2	6	E-05	-0.6	15.5	E-06
WELL 91		1972	243.17 - 245.08	<50	—	E-08	<5	—	E-05	<5	—	E-05	—	—	—
WELL 91		1972	243.17 - 245.08	500	300	E-08	<9	—	E-05	<20	—	E-05	900	700	E-08
WELL 78-2	78-2-9	1978	245.80	—	—	—	2	2	E-05	-2	3	E-05	13.2	15.7	E-06
WELL 79-3	79-3-5A	1979	246.19 - 248.00	-0.5	0.9	E-06	3	2	E-05	2	2	E-05	0.0	0.5	E-06
WELL 79-3	79-3-5B	1979	246.19 - 248.00	-0.1	0.9	E-06	3	2	E-05	2	2	E-05	0.4	0.6	E-06
WELL 79-3	79-3-6A	1979	252.00 - 254.00	1.0	1.3	E-06	3.6	2.1	E-05	-3	2	E-05	0.3	0.6	E-06
WELL 79-3	79-3-6B	1979	252.00 - 254.00	-0.2	0.9	E-06	0.8	2.0	E-05	-5	2	E-05	0.0	0.5	E-06
WELL 94		1972	262.25 - 264.58	90	140	E-08	25	3	E-05	18	3	E-05	400	300	E-08
/WELL 89		1971	295.00 - 296.33	—	—	—	<3	—	E-05	<4	—	E-05	<220	—	E-08

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	Am-241			Co-60			Cs-137			Pu-238		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP									
WELL 89		1971	365.00 - 371.00	—	—	—	<4	—	E-05	<3	—	E-05	—	—	—
WELL 90		1971	386.00 - 387.00	—	—	—	<2	—	E-05	<2	—	E-05	—	—	—
WELL 88		1971	521.00 - 522.00	500	300	E-08	—	—	—	—	—	—	135	200	E-08
WELL 89		1972	540.00 - 545.00	100	300	E-08	<1	—	E-05	<2	—	E-05	<270	—	E-08
WELL 89		1972	565.00 - 575.00	—	—	—	<4	—	E-05	<4	—	E-05	—	—	—

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	Pu-239/240			Sr-90			Ce-144			Th-232		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP									
D02	D-13	1987	1.17 - 1.67	1.13	0.05	E-03	1.9	0.3	E-04	—	—	—	—	—	—
WELL 91		1972	1.67 - 2.17	200	140	E-08	<3800	—	E-08	ND	—	—	—	—	—
WELL 91		1972	3.83 - 6.17	—	—	—	—	—	—	<2	—	E-04	110	60	E-05
WELL 94		1972	5.00 - 6.67	—	—	—	—	—	—	<3	—	E-04	145	1	E-05
WELL 82		1972	5.00 - 7.50	<100	—	E-08	240	70	E-08	ND	—	—	180	10	E-05
WELL 91		1972	7.83 - 8.92	2600	450	E-08	<4200	—	E-08	ND	—	—	190	10	E-05
D02	D-17	1987	9.17 - 9.67	0.6	1.1	E-08	-2	3	E-05	—	—	—	—	—	—
WELL 96		1972	10.00 - 12.50	200	150	E-08	<90	—	E-08	<4	—	E-04	370	20	E-05
WELL 76-4	76-4-1	1976	12.00	1.3	0.9	E-06	1	3	E-05	-100	100	E-05	—	—	—
WELL 93		1972	13.83 - 14.00	100	140	E-08	400	90	E-08	<3	—	E-04	130	5	E-05
D02	D-20	1987	15.50 - 16.00	2.55	0.09	E-04	1.3	0.3	E-04	—	—	—	—	—	—
WELL 76-2	76-2-1	1976	16.00	-7.1	5.7	E-08	-7	5	E-05	3	12	E-05	—	—	—
WELL 76-6	76-6-1	1976	17.10	0.1	0.6	E-06	4	4	E-05	-15	9	E-05	—	—	—
WELL 77-2	77-2-1	1976	19.20	0.0	2.0	E-06	—	—	—	60	30	E-05	—	—	—
WELL 76-4	76-4-2	1976	20.00	0.4	0.6	E-06	2	3	E-05	5	9	E-05	—	—	—
WELL 95		1972	20.00 - 22.00	300	150	E-08	200	90	E-08	<3	—	E-04	190	10	E-05
WELL 76-4	76-4-1A	1978	23.00	-0.4	0.5	E-06	4	3	E-05	3	13	E-05	—	—	—
WELL 76-4A	76-4A-1	1976	23.50	1.0	1.0	E-06	-4	3	E-05	-1	2	E-05	—	—	—
WELL 76-2	76-2-2	1976	24.00	-10.7	6.3	E-06	-4	5	E-05	20	20	E-05	—	—	—
WELL 76-2	76-2-3	1976	24.30	1.1	5.4	E-06	1	4	E-05	-8	14	E-05	—	—	—
WELL 76-3	76-3-1	1976	24.00 - 24.70	-0.6	1.0	E-06	0.4	4	E-05	-5	11	E-05	—	—	—
WELL 76-5	76-5-1	1976	25.40 - 26.00	0.0	1.0	E-06	0	3	E-05	30	20	E-05	—	—	—
WELL 76-3	76-3-2	1976	25.80 - 26.80	0.2	1.0	E-06	5	4	E-05	18	12	E-05	—	—	—
WELL 77-2	77-2-3	1976	25.80 - 27.70	1.5	0.9	E-06	5	4	E-05	-9	14	E-05	—	—	—
WELL 77-2	77-2-2	1976	27.70	0.9	0.8	E-06	8	4	E-05	10	10	E-05	—	—	—
WELL 76-1	76-1-2	1976	29.20	-29.2	19.9	E-06	-2	3	E-05	-1	13	E-05	—	—	—
WELL 76-1	76-1-1A	1978	31.30	-0.043	0.45	E-06	-1	4	E-05	-13	5	E-05	—	—	—
WELL 96A	1	1975	34.80 - 35.10	0.1	0.6	E-06	-10	4	E-05	18	11	E-05	—	—	—
WELL 76-1	76-1-1	1976	35.10	-10.8	20.1	E-06	5	4	E-05	5	15	E-05	—	—	—
WELL 96B	3	1975	36.00	0.1	0.6	E-06	-6	5	E-05	0	10	E-05	—	—	—
WELL 96B	2	1975	35.00 - 40.00	0.2	0.6	E-06	0	5	E-05	0	7	E-05	—	—	—
D06A	D-29	1987	47.00 - 49.00	7	7	E-07	4	3	E-05	—	—	—	—	—	—
WELL 76-2	76-2-4	1976	60.00	-2.9	4.3	E-06	—	—	—	-5	12	E-05	—	—	—
WELL 76-1	76-1-10	1976	70.00 - 75.00	-21.6	20	E-06	—	—	—	0	7	E-05	—	—	—
WELL 76-5	76-5-2	1976	75.10	2.0	3.0	E-06	0	3	E-05	-10	20	E-05	—	—	—
WELL 93A	8	1975	80.20 - 80.60	-0.3	0.5	E-06	-2	5	E-05	10	10	E-05	—	—	—
WELL 76-2	76-2-5	1976	82.50 - 83.50	11.5	4.4	E-06	-4	4	E-05	11	15	E-05	—	—	—
WELL 76-2	76-2-5	1976	82.50 - 83.50	-0.0	1.0	E-06	—	—	—	—	—	—	—	—	—
WELL 93A	9	1975	82.80 - 83.60	1.0	0.8	E-06	-2	5	E-05	20	10	E-05	—	—	—
WELL 76-1	76-1-3	1976	84.70 - 86.30	6.8	5.3	E-06	-6	5	E-05	60	111	E-05	—	—	—
WELL 92		1972	88.50 - 90.00	50	140	E-08	300	90	E-06	<2	—	E-04	—	—	—

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	Pu-239/240			Sr-90			Ca-144			Th-232		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP									
WELL 93A	10	1975	89.00 - 89.50	-0.3	0.5	E-06	7	5	E-05	4	13	E-05	—	—	—
WELL 93		1972	88.25 - 90.33	500	450	E-08	<200	—	E-06	<3	—	E-04	—	—	—
WELL 93		1972	88.25 - 90.33	200	150	E-08	<100	—	E-06	ND	—	—	—	—	—
WELL 93		1972	88.25 - 90.33	—	—	—	—	—	—	<1	—	E-04	45	3	E-05
WELL 78-3	78-3-1A	1978	92.19	1.8	0.7	E-06	-2	4	E-05	-7	6	E-05	—	—	—
WELL 78-3	78-3-1B	1978	92.19	0.4	0.4	E-06	1	4	E-05	-12	7	E-05	—	—	—
WELL 78-1	78-1-5	1976	92.30	13.2	6.1	E-06	—	—	—	0	50	E-05	—	—	—
WELL 78-1	78-1-4	1976	92.30 - 93.70	2.2	5.9	E-06	-3	5	E-05	0	20	E-05	—	—	—
WELL 78-5	78-5-3	1976	95.90	0.0	1.0	E-06	2	3	E-05	2	9	E-05	—	—	—
WELL 78-3	78-3-3	1976	96.50 - 96.80	-0.7	1.1	E-06	9	4	E-05	0	10	E-05	—	—	—
WELL 78-3	78-3-3	1976	96.50 - 96.80	—	—	—	1	3	E-05	—	—	—	—	—	—
WELL 94		1972	95.92 - 98.42	—	—	—	—	—	—	ND	—	—	170	7	E-05
WELL 78-3	78-3-4	1976	97.50 - 97.80	16.8	5.0	E-06	7	4	E-05	0	10	E-05	—	—	—
WELL 78-3	78-3-4	1976	97.50 - 97.80	0.0	1.0	E-06	—	—	—	—	—	—	—	—	—
WELL 78-4A	78-4A-2	1976	97.80	0.5	0.5	E-06	-4	3	E-05	20	20	E-05	—	—	—
WELL 93A	11	1975	97.90 - 98.00	0.0	0.6	E-06	2	4	E-05	10	10	E-05	—	—	—
WELL 78-2	78-2-1A	1978	98.39	0.2	0.7	E-06	-4	4	E-05	-4	4	E-05	—	—	—
WELL 78-2	78-2-1B	1978	98.39	1.2	0.7	E-06	3	4	E-05	-9	6	E-05	—	—	—
WELL 94		1972	95.92 - 102.00	50	80	E-08	150	50	E-06	<1	—	E-04	183	6	E-05
WELL 78-3	78-3-1A	1978	99.31	-0.04	0.02	E-06	2	4	E-05	-3	8	E-05	—	—	—
WELL 93		1972	98.00 - 101.00	11000	700	E-08	<300	—	E-06	ND	—	—	79	6	E-05
WELL 78-4	78-4-3	1976	99.50	3.1	1.3	E-06	1	3	E-05	10	20	E-05	—	—	—
WELL 78-4	78-4-3	1976	99.50	-0.7	0.9	E-06	—	—	—	—	—	—	—	—	—
WELL 79-2	79-2-1A	1979	99.11 - 99.90	61.0	4.0	E-06	-3	3	E-05	5	6	E-05	—	—	—
WELL 79-2	79-2-1B	1979	99.11 - 99.90	56.0	4.0	E-06	5	4	E-05	7	7	E-05	—	—	—
WELL 78-4	78-4-2A	1978	99.51	0.003	0.33	E-06	-5	4	E-05	0.7	8	E-05	—	—	—
WELL 78-2	78-2-2A	1978	99.51	0.3	0.5	E-06	2	5	E-05	-13	6	E-05	—	—	—
WELL 78-2	78-2-2B	1978	99.51	0.9	0.8	E-06	1	3	E-05	-10	6	E-05	—	—	—
WELL 78-2	78-2-3A	1978	100.20	0.2	0.5	E-06	3	4	E-05	-5	6	E-05	—	—	—
WELL 78-2	78-2-3B	1978	100.20	0.9	0.9	E-06	4	3	E-05	-4	6	E-05	—	—	—
WELL 78-5	78-5-1A	1978	100.39	-0.02	0.02	E-06	4	3	E-05	-7	8	E-05	—	—	—
WELL 96		1972	100.50 - 101.00	4500	200	E-08	<200	—	E-06	<2	—	E-04	128	5	E-05
WELL 93A	12	1975	100.60 - 100.90	0.0	0.6	E-06	2	8	E-05	10	10	E-05	—	—	—
WELL 79-2	79-2-2A	1979	99.90 - 101.71	34.0	3.0	E-06	-1	3	E-05	4	8	E-05	—	—	—
WELL 79-2	79-2-2B	1979	99.90 - 101.71	37.0	3.0	E-06	0	3	E-05	5	7	E-05	—	—	—
TW1	D-42	1987	101.00 - 101.17	7.4	0.4	E-04	5	4	E-05	—	—	—	—	—	—
TW1	D-42	1987	101.00 - 101.17	6.1	0.3	E-04	—	—	—	—	—	—	—	—	—
TW1	D-43A	1987	101.17	1.97	0.13	E-04	4	3	E-05	—	—	—	—	—	—
TW1	D-43A	1987	101.17	1.90	0.13	E-04	—	—	—	—	—	—	—	—	—
TW1	D-43A	1987	101.17	2.00	0.13	E-04	—	—	—	—	—	—	—	—	—

Dashed lines indicate that item was unknown (Depth), not calculated (Uncertainty), or not analyzed for (Result).

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	Pu-239/240			Sr-90			Ce-144			Th-232		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP									
TW1	D-43A	1987	101.17	1.68	0.09	E-04	—	—	—	—	—	—	—	—	—
TW1	D-43A	1987	101.17	1.7	0.09	E-04	—	—	—	—	—	—	—	—	—
TW1	D-43A	1987	101.17	1.78	0.13	E-04	—	—	—	—	—	—	—	—	—
WELL 78-5	78-5-2A	1978	101.61	0.4	1.0	E-06	1	4	E-05	-11	8	E-05	—	—	—
WELL 78-5	78-5-1A	1978	101.71	0.9	0.9	E-06	-5	3	E-05	3	6	E-05	—	—	—
WELL 78-5	78-5-1B	1978	101.71	0.025	0.77	E-06	-5	4	E-05	-8	7	E-05	—	—	—
WELL 96B	4	1975	101.60 - 102.00	0.5	0.8	E-06	-8	5	E-05	10	10	E-05	—	—	—
WELL 93		1972	101.00 - 103.00	23000	1100	E-08	690	110	E-06	<2	—	E-04	145	8	E-05
WELL 93		1972	101.00 - 103.00	54000	1200	E-08	<200	—	E-06	—	—	—	—	—	—
WELL 78-8	78-8-2	1976	102.10	1.4	1.1	E-06	9	5	E-05	-10	20	E-05	—	—	—
WELL 79-2	79-2-3A	1979	101.71 - 102.99	38.0	3.0	E-06	0	3	E-05	-1	7	E-05	—	—	—
WELL 79-2	79-2-3B	1979	101.71 - 102.99	38.0	3.0	E-06	0	3	E-05	3	6	E-05	—	—	—
WELL 79-2	79-2-4A	1979	101.71 - 102.99	-0.0	0.9	E-06	-2	3	E-05	-9	7	E-05	—	—	—
WELL 79-2	79-2-4B	1979	101.71 - 102.99	-0.5	0.9	E-06	-2	3	E-05	2	5	E-05	—	—	—
WELL 93A	13	1975	102.40 - 102.80	0.4	0.6	E-06	6	4	E-05	10	10	E-05	—	—	—
WELL 79-3	79-3-1A	1979	100.69 - 106.20	0.5	1.1	E-06	0	3	E-05	0.4	6.0	E-05	—	—	—
WELL 79-3	79-3-1B	1979	100.69 - 106.20	-0.0	0.9	E-06	-5	3	E-05	6	8	E-05	—	—	—
WELL 78-2	78-2-4A	1978	103.61	0.6	0.4	E-06	0	3	E-05	-3	6	E-05	—	—	—
WELL 78-2	78-2-4B	1978	103.61	2.0	1.0	E-06	2	3	E-05	-17	6	E-05	—	—	—
WELL 76-1	76-1-8	1976	103.00 - 104.50	4.5	6.6	E-06	-10	5	E-05	0	20	E-05	—	—	—
WELL 95		1972	103.08 - 104.58	—	—	—	—	—	—	<70	—	E-04	320	30	E-05
WELL 93		1972	103.00 - 105.00	8100	1100	E-08	400	100	E-06	ND	—	—	—	—	—
WELL 96		1972	103.17 - 104.69	20	300	E-08	<200	—	E-06	—	—	—	—	—	—
WELL 76-3	76-3-2A	1978	104.49	-0.7	0.6	E-06	1	3	E-05	13	13	E-05	—	—	—
WELL 78-5	78-5-2A	1978	106.20	0.4	0.5	E-06	6	4	E-05	-19	7	E-05	—	—	—
WELL 78-5	78-5-2B	1978	106.20	-0.041	0.75	E-06	-4	4	E-05	-3	7	E-05	—	—	—
WELL 76-3	76-3-3A	1978	106.30	0.1	0.4	E-06	4	4	E-05	-6	8	E-05	—	—	—
WELL 88		1971	105.00 - 108.00	—	—	—	—	—	—	ND	—	—	30	2	E-05
WELL 76-5	76-5-3A	1978	106.59	0.3	0.4	E-06	-2	4	E-05	-10	20	E-05	—	—	—
WELL 96B	5	1975	106.40 - 106.80	0.1	0.6	E-06	-6	5	E-05	20	10	E-05	—	—	—
WELL 76-5	76-5-4A	1978	108.50	0.009	0.53	E-06	5	3	E-05	-13	6	E-05	—	—	—
WELL 78-5	78-5-3A	1978	110.20	0.4	0.3	E-06	-2	3	E-05	-4	14	E-05	—	—	—
WELL 78-5	78-5-3B	1978	110.20	1.3	0.9	E-06	5	3	E-05	-4	8	E-05	—	—	—
WELL 90		1971	108.00 - 113.00	—	—	—	—	—	—	<2	—	E-04	106	5	E-05
WELL 76-3	76-3-5	1976	110.50 - 111.00	-0.4	1.1	E-06	4	3	E-05	23	13	E-05	—	—	—
WELL 96		1972	111.00 - 111.50	50	140	E-08	<300	—	E-06	ND	—	—	—	—	—
WELL 96		1972	110.00 - 112.92	50	80	E-08	—	—	—	<2	—	E-04	—	—	—
WELL 96		1972	110.00 - 112.92	300	150	E-08	<200	—	E-06	<2	—	E-04	168	6	E-05
WELL 88		1971	111.00 - 112.50	1000	—	E-08	<90	—	E-06	<3	—	E-04	210	10	E-05

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	Pu-239/240			Sr-90			Ce-144			Th-232		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP									
WELL 78-5	78-5-4A	1978	112.40	0.9	0.5	E-06	2	3	E-05	-6	8	E-05	—	—	—
WELL 78-5	78-5-4B	1978	112.40	1.9	0.9	E-06	5	3	E-05	-12	6	E-05	—	—	—
WELL 89		1971	110.00 - 115.00	<500	—	E-08	<200	—	E-06	<3	—	E-04	100	8	E-05
WELL 95		1972	112.00 - 113.33	50	80	E-08	<200	—	E-06	<2	—	E-04	205	6	E-05
WELL 76-3	76-3-4A	1978	114.01	0.2	0.1	E-06	5	3	E-05	-8	6	E-05	—	—	—
WELL 76-5	76-5-5	1976	114.30 - 114.80	0.8	0.7	E-06	3	3	E-05	4	9	E-05	—	—	—
WELL 76-5	76-5-5A	1978	114.80	-0.7	0.6	E-06	7	4	E-05	14	13	E-05	—	—	—
WELL 76-3	76-3-5A	1978	116.01	-0.7	0.5	E-06	-1	3	E-05	-7	6	E-05	—	—	—
WELL 79-1	79-1-1A	1979	114.80 - 121.19	0.9	0.9	E-06	1	3	E-05	-5	6	E-05	—	—	—
WELL 79-1	79-1-1B	1979	114.80 - 121.19	-0.5	1.0	E-06	2	3	E-05	1.6	0.9	E-05	—	—	—
WELL 76-3	76-3-8	1976	119.50 - 119.70	2.0	20.9	E-06	-7	4	E-05	2	3	E-05	—	—	—
WELL 79-1	79-1-2A	1979	121.59 - 123.39	-0.1	0.7	E-06	-2	3	E-05	-6	6	E-05	—	—	—
WELL 79-1	79-1-2B	1979	121.59 - 123.39	-0.9	1.0	E-06	1	3	E-05	-20	20	E-05	—	—	—
WELL 98		1972	122.75 - 124.75	200	140	E-08	200	100	E-06	<4	—	E-04	390	40	E-05
WELL 98		1972	124.00 - 124.25	<50	—	E-08	200	100	E-06	ND	—	—	—	—	—
WELL 79-1	79-1-3A	1979	129.20 - 131.79	0.2	0.8	E-06	1	3	E-05	4	7	E-05	—	—	—
WELL 79-1	79-1-3B	1979	129.20 - 131.79	-0.3	1.0	E-06	-1	3	E-05	-2	7	E-05	—	—	—
WELL 79-1	79-1-4A	1979	131.79 - 133.79	-0.0	0.7	E-06	-2	3	E-05	1	7	E-05	—	—	—
WELL 79-1	79-1-4B	1979	131.79 - 133.79	-0.6	1.1	E-06	-3	4	E-05	9.0	10	E-05	—	—	—
WELL 79-1	79-1-5A	1979	135.30 - 137.50	0.0	0.7	E-06	-5	3	E-05	0.7	9.0	E-05	—	—	—
WELL 79-1	79-1-5B	1979	135.30 - 137.50	-0.6	0.9	E-06	2	3	E-05	-6	8	E-05	—	—	—
WELL 79-1	79-1-6A	1979	137.50 - 139.70	2.1	1.3	E-06	-2	3	E-05	4	8	E-05	—	—	—
WELL 79-1	79-1-6B	1979	137.50 - 139.70	-0.3	1.0	E-06	5	3	E-05	-2	7	E-05	—	—	—
WELL 79-1	79-1-7A	1979	139.70 - 141.70	-0.0	0.9	E-06	3	3	E-05	6	8	E-05	—	—	—
WELL 79-1	79-1-7B	1979	139.70 - 141.70	0.3	1.2	E-06	0	3	E-05	4	7	E-05	—	—	—
WELL 76-1	76-1-7	1976	217.20	-4.8	4.0	E-06	-5	3	E-05	10	20	E-05	—	—	—
WELL 92		1972	218.00 - 220.50	400	300	E-08	<200	—	E-06	<0.9	—	E-04	28	3	E-05
WELL 76-1	76-1-8	1976	221.00	14.4	21	E-06	49	6	E-05	0	10	E-05	—	—	—
WELL 96B	6	1975	220.90 - 221.20	0.1	0.8	E-06	-2	5	E-05	10	10	E-05	—	—	—
WELL 76-1	76-1-8	1976	221.20	—	—	—	42	5	E-05	—	—	—	—	—	—
WELL 76-3	76-3-7	1978	222.50	-8.4	20	E-06	20	8	E-05	16	14	E-05	—	—	—
WELL 76-3	76-3-7	1978	222.50	—	—	—	2	4	E-05	—	—	—	—	—	—
WELL 93A	14	1975	221.50 - 223.50	0.1	0.5	E-06	5	5	E-05	-10	10	E-05	—	—	—
WELL 96		1972	221.58 - 224.08	400	140	E-08	200	90	E-06	<2	—	E-04	183	8	E-05
WELL 76-2	76-2-6	1976	223.00	1.7	20.1	E-06	3	4	E-05	0	10	E-05	—	—	—
WELL 76-4A	76-4A-3	1976	223.50	1.2	0.8	E-06	0	3	E-05	-14	10	E-05	—	—	—
WELL 76-5	76-5-4	1976	223.70	-0.7	0.5	E-06	-2	6	E-05	8	10	E-05	—	—	—
WELL 96B	7	1975	223.60 - 223.90	0.7	0.7	E-06	3	5	E-05	6	9	E-05	—	—	—
WELL 78-3	78-3-2A	1978	223.79	0.5	0.4	E-06	2	4	E-05	-1	10	E-05	—	—	—
WELL 78-3	78-3-2B	1978	223.79	0.9	0.7	E-06	4	3	E-05	20	20	E-05	—	—	—

Dashed lines indicate that item was unknown (Depth), not calculated (Uncertainty), or not analyzed for (Result).

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	Pu-239/240			Sr-90			Ce-144			Th-232		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP									
D02	D-30	1987	223.83 - 224.33	8	9	E-07	-2	4	E-05	—	—	—	—	—	—
WELL 76-1	76-1-2A	1978	224.21	-0.7	0.8	E-08	-6	4	E-05	30	20	E-05	—	—	—
WELL 92		1972	223.00 - 225.50	720	300	E-08	300	90	E-08	<2	—	E-04	39	0.6	E-05
WELL 76-5	76-5-6A	1978	225.20	-0.6	0.6	E-08	-6	4	E-05	25	13	E-05	—	—	—
D02	D-31	1987	224.33 - 226.33	7	8	E-07	2	3	E-05	—	—	—	—	—	—
WELL 76-2	76-2-1A	1978	225.39	0.6	0.8	E-08	-3	3	E-05	9	8	E-05	—	—	—
TW1	D-47	1987	225.75 - 225.92	8	7	E-07	8	3	E-05	—	—	—	—	—	—
TW1	D-47	1987	225.75 - 225.92	2	6	E-07	—	—	—	—	—	—	—	—	—
WELL 76-3	76-3-6A	1978	225.98	0.6	0.7	E-08	-5	3	E-05	10	10	E-05	—	—	—
WELL 76-4A	76-4A-4	1976	228.00	-0.2	0.5	E-08	1	3	E-05	40	30	E-05	—	—	—
WELL 76-1	76-1-3A	1978	228.41	1.3	0.8	E-08	-1	3	E-05	9	14	E-06	—	—	—
WELL 94		1972	228.25 - 228.75	100	150	E-08	<90	—	E-06	<3	—	E-04	170	7	E-05
WELL 76-5	78-5-5A	1978	228.51	1.4	0.9	E-08	7	4	E-05	5	7	E-05	—	—	—
WELL 76-5	78-5-5B	1978	228.51	-0.071	0.45	E-08	2	3	E-05	1	11	E-05	—	—	—
WELL 93A	15	1975	228.50 - 228.80	0.3	0.5	E-08	7	4	E-05	-10	10	E-05	—	—	—
WELL 76-3	78-3-3A	1978	228.90	0.002	0.48	E-08	0	3	E-05	10	10	E-05	—	—	—
WELL 76-3	78-3-3B	1978	226.90	-0.1	0.5	E-08	-1	4	E-05	-5	7	E-05	—	—	—
WELL 76-2	78-2-2A	1978	227.00	0.2	0.6	E-08	1	3	E-05	-10	6	E-05	—	—	—
TW1	D-48	1987	226.83 - 227.58	3	6	E-07	3	3	E-05	—	—	—	—	—	—
TW1	D-48	1987	226.83 - 227.58	2	7	E-07	—	—	—	—	—	—	—	—	—
TW1	D-48	1987	226.83 - 227.58	7	7	E-07	—	—	—	—	—	—	—	—	—
WELL 93		1972	226.25 - 228.75	90	90	E-08	<200	—	E-06	<3	—	E-04	180	8	E-05
WELL 76-1	76-1-4A	1978	227.79	0.031	0.53	E-08	4	4	E-05	9	8	E-05	—	—	—
WELL 96		1972	226.58 - 229.25	200	300	E-08	<200	—	E-06	<8	—	E-04	1450	40	E-05
WELL 76-4A	76-4A-1A	1978	227.99	0.007	0.52	E-08	5	3	E-05	-2	9	E-05	—	—	—
WELL 95		1972	226.75 - 229.25	900	700	E-08	<200	—	E-06	<3	—	E-04	213	1	E-05
WELL 76-1	76-1-9	1978	228.30	-1.7	20	E-08	7	8	E-05	2	11	E-05	—	—	—
WELL 76-1	76-1-5A	1978	228.31	-0.4	0.5	E-08	7	4	E-05	14	9	E-05	—	—	—
WELL 76-3	78-3-8	1978	228.50	-7.4	19.9	E-08	5	4	E-05	40	20	E-05	—	—	—
D02	D-34A	1987	229.67 - 230.00	3	6	E-07	—	—	—	—	—	—	—	—	—
D02	D-34A	1987	229.67 - 230.00	-3	7	E-07	—	—	—	—	—	—	—	—	—
D02	D-34A	1987	229.67 - 230.00	4	6	E-07	—	—	—	—	—	—	—	—	—
WELL 76-5	78-5-6A	1978	230.09	0.7	0.8	E-08	-6	4	E-05	-26	8	E-05	—	—	—
WELL 76-5	78-5-6B	1978	230.09	-0.9	0.6	E-08	1	4	E-05	-20	20	E-05	—	—	—
D02	D-34	1987	230.00 - 230.33	0.8	1.0	E-08	4	3.0	E-03	—	—	—	—	—	—
D02	D-34	1987	230.00 - 230.33	5.8	0.2	E-05	—	—	—	—	—	—	—	—	—
D02	D-34	1987	230.00 - 230.33	2	3	E-07	—	—	—	—	—	—	—	—	—
D02	D-34	1987	230.00 - 230.33	3	4	E-07	—	—	—	—	—	—	—	—	—
WELL 76-5	78-5-7A	1978	230.31	-0.4	0.5	E-08	-1	4	E-05	-1	7	E-05	—	—	—
WELL 76-3	78-3-4A	1978	230.31	0.2	0.2	E-08	2	3	E-05	9	15	E-05	—	—	—

Red lines indicate that item was unknown (Depth), not calculated (Uncertainty), or not analyzed for (Result).

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	Pu-239/240			Sr-90			Ce-144			Th-232		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP									
WELL 78-3	78-3-4B	1978	230.31	-0.059	0.51	E-06	4	4	E-05	3	7	E-05	—	—	—
WELL 78-4A	78-4A-2A	1978	230.61	-0.1	0.6	E-06	6	3	E-05	2	9	E-05	—	—	—
WELL 78-2	78-2-5A	1978	231.79	0.5	0.6	E-06	4	4	E-05	10	10	E-05	—	—	—
WELL 78-2	78-2-5B	1978	231.79	-0.4	0.7	E-06	0	5	E-05	-10	10	E-05	—	—	—
WELL 79-1	79-1-8A	1979	231.10 - 232.61	0.5	1.0	E-06	-1	3	E-05	-0.4	5.4	E-05	—	—	—
WELL 79-1	79-1-8B	1979	231.10 - 232.61	-0.4	0.9	E-06	2	3	E-05	-4	8	E-05	—	—	—
WELL 79-1	79-1-9A	1979	231.10 - 232.61	-0.1	0.9	E-06	-1	3	E-05	2	6	E-05	—	—	—
WELL 79-1	79-1-9B	1979	231.10 - 232.61	0.8	1.1	E-06	4	3	E-05	8	7	E-05	—	—	—
WELL 87		1971	231.17 - 233.00	2900	400	E-08	460	50	E-06	<4	—	E-04	170	10	E-05
WELL 78-3	78-3-7A	1978	232.32	-0.4	0.5	E-06	2	3	E-05	-4	8	E-05	—	—	—
D02	D-35	1987	232.25 - 232.58	1.1	1.0	E-06	2	3	E-05	—	—	—	—	—	—
WELL 78-6	78-6-3	1978	232.20 - 233.20	0.9	0.9	E-06	-3	5	E-05	-25	13	E-05	—	—	—
WELL 78-5	78-5-7A	1978	232.91	0.074	0.5	E-06	-1	4	E-05	-3	8	E-05	—	—	—
WELL 78-5	78-5-7B	1978	232.91	-0.7	0.6	E-06	2	4	E-05	1	8	E-05	—	—	—
WELL 78-2	78-2-3A	1978	233.40	0.1	0.5	E-06	-5	3	E-05	10	10	E-05	—	—	—
WELL 78-4A	78-4A-3A	1978	233.40	0.2	0.5	E-06	2	3	E-05	-9	8	E-05	—	—	—
WELL 87		1971	233.00 - 234.50	270	210	E-08	<90	—	E-06	<4	—	E-04	150	10	E-05
D02	D-36	1987	233.75 - 234.17	1.1	1.4	E-06	2	4	E-05	—	—	—	—	—	—
WELL 95		1972	233.25 - 235.17	200	140	E-08	<200	—	E-06	<3	—	E-04	184	10	E-05
WELL 91		1972	234.00 - 234.50	<100	—	E-08	<3300	—	E-06	ND	—	—	—	—	—
WELL 78-5	78-5-8A	1978	234.28	0.2	0.6	E-06	2	3	E-05	-2	6	E-05	—	—	—
WELL 78-6	78-6-1A	1978	234.71	0.2	0.5	E-06	1	4	E-05	0	20	E-05	—	—	—
WELL 78-3	78-3-8A	1978	234.91	-0.45	0.45	E-06	0	3	E-05	-2	8	E-05	—	—	—
D02	D-37	1987	234.75 - 235.17	1.0	0.9	E-06	-3	4	E-05	—	—	—	—	—	—
WELL 91		1972	233.75 - 236.25	50	80	E-08	1200	100	E-06	<2	—	E-04	—	—	—
WELL 78-2	78-2-7	1978	235.00	0.7	20.1	E-06	8	6	E-05	-0.3	14	E-05	—	—	—
WELL 78-2	78-2-4A	1978	235.20	-0.5	0.6	E-06	3	3	E-05	-9	8	E-05	—	—	—
WELL 78-3	78-3-5A	1978	235.60	0.4	0.6	E-06	2	3	E-05	-15	8	E-05	—	—	—
WELL 78-3	78-3-5B	1978	235.60	0.15	1.4	E-06	-4	4	E-05	4	8	E-05	—	—	—
WELL 78-2	78-2-6A	1978	235.70	-0.1	0.3	E-06	2	3	E-05	8	14	E-05	—	—	—
WELL 78-2	78-2-6B	1978	235.70	0.3	0.9	E-06	-7	4	E-05	-5	6	E-05	—	—	—
WELL 79-3	79-3-2A	1979	235.01 - 236.91	0.4	0.9	E-06	2	3	E-05	-0.6	8.0	E-05	—	—	—
WELL 79-3	79-3-2B	1979	235.01 - 236.91	-0.2	0.8	E-06	-5	3	E-05	-4	7	E-05	—	—	—
WELL 78-6	78-6-2A	1978	236.29	-0.5	0.5	E-06	-3	4	E-05	6	12	E-05	—	—	—
WELL 78-6	78-6-4	1978	236.30	0.5	0.7	E-06	2	3	E-05	10	10	E-05	—	—	—
WELL 78-4A	78-4A-4A	1978	236.38	-0.5	0.6	E-06	1	3	E-05	4	6	E-05	—	—	—
WELL 91		1972	236.50 - 237.00	14000	700	E-08	<3300	—	E-06	ND	—	—	140	6	E-05
WELL 91		1972	236.25 - 238.75	50	140	E-08	—	—	—	<2	—	E-04	—	—	—
WELL 91		1972	238.00	200	300	E-08	<200	—	E-06	ND	—	—	—	—	—
WELL 78-2	78-2-7A	1978	238.39	-0.026	0.49	E-06	3	4	E-05	-6	6	E-05	—	—	—

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	Pu-239/240			Sr-90			Ce-144			Th-232		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP									
WELL 78-2	78-2-7B	1978	238.39	-0.7	0.5	E-06	4	4	E-05	-2	8	E-05	—	—	—
WELL 78-3	78-3-6A	1978	238.71	0.2	0.5	E-06	8	5	E-05	-6	7	E-05	—	—	—
WELL 78-3	78-3-6B	1978	238.71	1.3	0.9	E-06	0	4	E-05	-16	7	E-05	—	—	—
WELL 78-2	78-2-5A	1978	239.40	-0.5	0.5	E-06	4	3	E-05	-2	7	E-05	—	—	—
WELL 78-4A	78-4A-5A	1978	239.60	-0.006	0.66	E-06	-3	3	E-05	7	14	E-05	—	—	—
WELL 78-3	78-3-9A	1978	239.90	0.005	0.45	E-06	-2	3	E-05	-1	6	E-05	—	—	—
WELL 78-5	78-5-8A	1978	240.29	0.3	0.5	E-06	8	5	E-05	1	8	E-05	—	—	—
WELL 78-5	78-5-8B	1978	240.29	13.0	2.0	E-06	-1	4	E-05	10	20	E-05	—	—	—
WELL 78-3	78-3-9	1978	240.40	10.7	5.8	E-06	7	4	E-05	3	10	E-05	—	—	—
WELL 79-1	79-1-10A	1979	237.50 - 244.00	0.2	0.8	E-06	-1	3	E-05	2	6	E-05	—	—	—
WELL 79-1	79-1-10B	1979	237.50 - 244.00	-0.3	0.9	E-06	2	3	E-05	2	2	E-05	—	—	—
WELL 79-3	79-3-3A	1979	240.58 - 242.49	0.2	0.9	E-06	-5	4	E-05	4	7	E-05	—	—	—
WELL 79-3	79-3-3B	1979	240.58 - 242.49	-0.4	0.8	E-06	4	4	E-05	-8	7	E-05	—	—	—
WELL 78-4A	78-4A-6A	1978	242.19	-0.020	0.45	E-06	4	3	E-05	-8	8	E-05	—	—	—
WELL 78-5	78-5-9A	1978	242.19	-0.5	0.6	E-06	5	3	E-05	-7	8	E-05	—	—	—
WELL 89		1971	241.58 - 243.17	<100	—	E-06	640	70	E-06	<0.2	—	E-04	224	8	E-05
WELL 78-3	78-3-7A	1978	242.39	-0.042	0.49	E-06	2	4	E-05	4	8	E-05	—	—	—
WELL 78-3	78-3-7B	1978	242.39	-0.5	0.6	E-06	12	4	E-05	-8	7	E-05	—	—	—
WELL 78-2	78-2-6A	1978	242.68	0.5	0.6	E-06	1	3	E-05	-20	7	E-05	—	—	—
WELL 78-2	78-2-8A	1978	243.11	-0.2	0.4	E-06	3	4	E-05	-10	10	E-05	—	—	—
WELL 78-2	78-2-8B	1978	243.11	0.1	0.7	E-06	-3	5	E-05	0	9	E-05	—	—	—
WELL 79-3	79-3-4A	1979	242.49 - 244.29	0.0	0.9	E-06	0	4	E-05	2	6	E-05	—	—	—
WELL 79-3	79-3-4B	1979	242.49 - 244.29	-0.0	0.8	E-06	1	3	E-05	-6	8	E-05	—	—	—
WELL 78-4A	78-4A-7A	1978	243.41	0.063	0.58	E-06	-2	4	E-05	0	8	E-05	—	—	—
WELL 91		1972	243.17 - 243.83	200	150	E-06	<3200	—	E-06	ND	—	—	—	—	—
WELL 78-2	78-2-8	1976	243.90	6.6	19.9	E-06	-2	6	E-05	-7	16	E-05	—	—	—
WELL 91		1972	243.17 - 245.08	<50	—	E-06	<300	—	E-06	<2	—	E-04	—	—	—
WELL 91		1972	243.17 - 245.08	200	300	E-06	500	90	E-06	ND	—	—	—	—	—
WELL 78-2	78-2-9	1976	245.80	23.5	20.1	E-06	-7	6	E-05	-9	9	E-05	—	—	—
WELL 79-3	79-3-5A	1979	246.19 - 248.00	0.6	0.9	E-06	4	4	E-05	-1	6	E-05	—	—	—
WELL 79-3	79-3-5B	1979	246.19 - 248.00	-0.5	0.8	E-06	-2	3	E-05	-7	6	E-05	—	—	—
WELL 79-3	79-3-6A	1979	252.00 - 254.00	0.9	1.0	E-06	-6	4	E-05	6	6	E-05	—	—	—
WELL 79-3	79-3-6B	1979	252.00 - 254.00	-0.4	0.7	E-06	10	4	E-05	4	6	E-05	—	—	—
WELL 94		1972	262.25 - 284.58	300	150	E-06	<200	—	E-06	<3	—	E-04	160	10	E-05
WELL 89		1971	295.00 - 296.33	220	210	E-06	<200	—	E-06	<3	—	E-04	35	7	E-05
WELL 89		1971	385.00 - 371.00	—	—	—	—	—	—	<3	—	E-04	93	9	E-05
WELL 90		1971	386.00 - 387.00	—	—	—	—	—	—	<2	—	E-04	57	4	E-05
WELL 88		1971	521.00 - 522.00	2200	300	E-06	400	90	E-06	—	—	—	—	—	—
WELL 89		1972	540.00 - 545.00	<140	—	E-06	300	90	E-06	<0.9	—	E-04	35	3	E-05
WELL 89		1972	565.00 - 575.00	—	—	—	—	—	—	<3	—	E-04	60	6	E-05

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	U-238			Zn-65			Ac-228			Ba-140/La-140		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP									
WELL 91		1972	1.67 - 2.17	—	—	—	ND	—	—	130	3	E-05	ND	—	—
WELL 91		1972	3.83 - 6.17	—	—	—	<5	—	E-05	—	—	—	ND	—	—
WELL 94		1972	5.00 - 6.67	—	—	—	<10	—	E-05	—	—	—	ND	—	—
WELL 92		1972	5.00 - 7.50	130	4	E-05	—	—	—	160	10	E-05	ND	—	—
WELL 91		1972	7.83 - 8.92	98	4	E-05	ND	—	—	190	10	E-05	ND	—	—
WELL 96		1972	10.00 - 12.50	—	—	—	<20	—	E-05	—	—	—	ND	—	—
WELL 93		1972	13.83 - 14.00	91	3	E-05	<10	—	E-05	130	5	E-05	4.3	1.2	E-05
WELL 95		1972	20.00 - 22.00	—	—	—	<10	—	E-05	—	—	—	ND	—	—
WELL 92		1972	88.50 - 90.00	—	—	—	<6	—	E-05	—	—	—	ND	—	—
WELL 93		1972	88.25 - 90.33	—	—	—	<4	—	E-05	100	10	E-05	ND	—	—
WELL 93		1972	88.25 - 90.33	—	—	—	<9	—	E-05	—	—	—	ND	—	—
WELL 93		1972	88.25 - 90.33	—	—	—	ND	—	—	—	—	—	ND	—	—
WELL 94		1972	95.92 - 98.42	120	3	E-05	ND	—	—	170	7	E-05	ND	—	—
WELL 94		1972	95.92 - 102.00	—	—	—	<7	—	E-05	—	—	—	ND	—	—
WELL 93		1972	98.00 - 101.00	52	4	E-05	ND	—	—	78	6	E-05	ND	—	—
WELL 96		1972	100.50 - 101.00	—	—	—	<6	—	E-05	—	—	—	ND	—	—
WELL 93		1972	101.00 - 103.00	—	—	—	<9	—	E-05	—	—	—	—	—	—
WELL 93		1972	101.00 - 103.00	—	—	—	—	—	—	—	—	—	ND	—	—
WELL 95		1972	103.08 - 104.58	—	—	—	<30	—	E-05	—	—	—	ND	—	—
WELL 96		1972	103.17 - 104.69	—	—	—	—	—	—	—	—	—	—	—	—
WELL 93		1972	103.00 - 105.00	—	—	—	ND	—	—	—	—	—	ND	—	—
WELL 88		1971	105.00 - 108.00	30	1	E-05	ND	—	—	30	2	E-05	ND	—	—
WELL 90		1971	108.00 - 113.00	—	—	—	<6	—	E-05	ND	—	—	ND	—	—
WELL 96		1972	111.00 - 111.50	—	—	—	ND	—	—	—	—	—	ND	—	—
WELL 96		1972	110.00 - 112.92	—	—	—	<10	—	E-05	250	10	E-05	ND	—	—
WELL 96		1972	110.00 - 112.92	—	—	—	<8	—	E-05	—	—	—	ND	—	—
WELL 88		1971	111.00 - 112.50	—	—	—	<20	—	E-05	ND	—	—	ND	—	—
WELL 89		1971	110.00 - 115.00	—	—	—	<7	—	E-05	ND	—	—	ND	—	—
WELL 95		1972	112.00 - 113.33	—	—	—	<5	—	E-05	—	—	—	ND	—	—
WELL 96		1972	122.75 - 124.75	—	—	—	<10	—	E-05	—	—	—	ND	—	—
WELL 96		1972	124.00 - 124.25	—	—	—	ND	—	—	—	—	—	ND	—	—
WELL 92		1972	218.00 - 220.50	—	—	—	<3	—	E-05	—	—	—	ND	—	—
WELL 96		1972	221.58 - 224.08	—	—	—	<9	—	E-05	—	—	—	ND	—	—
WELL 92		1972	223.00 - 225.50	—	—	—	<80	—	E-05	—	—	—	ND	—	—
WELL 94		1972	226.25 - 226.75	120	3	E-05	<6	—	E-05	170	7	E-05	ND	—	—
WELL 93		1972	226.25 - 228.75	110	4	E-05	<8	—	E-05	180	8	E-05	ND	—	—
WELL 96		1972	226.58 - 229.25	—	—	—	<50	—	E-05	—	—	—	ND	—	—
WELL 95		1972	226.75 - 229.25	—	—	—	<20	—	E-05	—	—	—	ND	—	—
WELL 87		1971	231.17 - 233.00	—	—	—	<20	—	E-05	ND	—	—	ND	—	—
WELL 87		1971	233.00 - 234.50	—	—	—	<20	—	E-05	ND	—	—	ND	—	—
WELL 95		1972	233.25 - 235.17	—	—	—	<10	—	E-05	—	—	—	ND	—	—
WELL 91		1972	234.00 - 234.50	—	—	—	ND	—	—	140	6	E-05	ND	—	—

Dashed lines indicate that item was unknown (Depth), not calculated (Uncertainty), or not analyzed for (Result).

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	U-238			Zn-65			Ac-228			Ba-140/La-140		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP.									
WELL 91		1972	233.75 - 236.25	—	—	—	<6	—	E-05	—	—	—	ND	—	—
WELL 91		1972	236.50 - 237.00	110	3	E-05	ND	—	—	140	6	E-05	ND	—	—
WELL 91		1972	236.25 - 238.75	—	—	—	<6	—	E-05	—	—	—	ND	—	—
WELL 91		1972	238.00	—	—	—	ND	—	—	—	—	—	ND	—	—
WELL 89		1971	241.58 - 243.17	—	—	—	<7	—	E-05	ND	—	—	ND	—	—
WELL 91		1972	243.17 - 243.83	—	—	—	ND	—	—	160	5	E-05	ND	—	—
WELL 91		1972	243.17 - 245.08	—	—	—	ND	—	—	168	8	E-05	ND	—	—
WELL 91		1972	243.17 - 245.08	—	—	—	<20	—	E-05	—	—	—	ND	—	—
WELL 94		1972	262.25 - 264.58	—	—	—	<20	—	E-05	—	—	—	ND	—	—
WELL 89		1971	295.00 - 296.33	—	—	—	<6	—	E-05	ND	—	—	ND	—	—
WELL 89		1971	365.00 - 371.00	—	—	—	<6	—	E-05	ND	—	—	ND	—	—
WELL 90		1971	386.00 - 387.00	—	—	—	<4	—	E-05	ND	—	—	ND	—	—
WELL 89		1972	540.00 - 545.00	—	—	—	<4	—	E-05	ND	—	—	ND	—	—
WELL 89		1972	565.00 - 575.00	—	—	—	<8	—	E-05	ND	—	—	ND	—	—

— indicates that item was unknown (Depth), not calculated (Uncertainty), or not analyzed for (Result).

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	BI-214			Fe-59			K-40			Mn-54		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP									
WELL 91		1972	1.67 - 2.17	100	2	E-05	ND	—	—	150	2	E-04	ND	—	—
WELL 91		1972	3.83 - 6.17	ND	—	—	<4	—	E-05	150	3	E-04	<2	—	E-05
WELL 94		1972	5.00 - 6.67	ND	—	—	<9	—	E-05	205	6	E-04	<40	—	E-05
WELL 92		1972	5.00 - 7.50	130	4	E-05	ND	—	—	180	4	E-04	ND	—	—
WELL 91		1972	7.83 - 8.92	96	4	E-05	ND	—	—	210	6	E-04	ND	—	—
WELL 96		1972	10.00 - 12.50	ND	—	—	<10	—	E-05	462	9	E-04	<6	—	E-05
WELL 93		1972	13.83 - 14.00	91	3	E-05	<9	—	E-05	150	3	E-04	<10	—	E-05
WELL 95		1972	20.00 - 22.00	ND	—	—	<9	—	E-05	234	5	E-04	<4	—	E-05
WELL 92		1972	88.50 - 90.00	ND	—	—	<5	—	E-05	ND	—	—	<2	—	E-05
WELL 93		1972	88.25 - 90.33	ND	—	—	<4	—	E-05	ND	—	—	<2	—	E-05
WELL 93		1972	88.25 - 90.33	ND	—	—	<8	—	E-05	60	3	E-04	<4	—	E-05
WELL 93		1972	88.25 - 90.33	ND	—	—									
WELL 94		1972	95.92 - 98.42	120	3	E-05	ND	—	—	220	3	E-04	ND	—	—
WELL 94		1972	95.92 - 102.00	ND	—	—	<6	—	E-05	258	4	E-04	<2	—	E-05
WELL 93		1972	98.00 - 101.00	52	4	E-05	ND	—	—	120	40	E-04	ND	—	—
WELL 96		1972	100.50 - 101.00	ND	—	—	<5	—	E-05	ND	—	—	<2	—	E-05
WELL 93		1972	101.00 - 103.00	ND	—	—	<6	—	E-05	182	4	E-04	<3	—	E-05
WELL 95		1972	103.08 - 104.58	ND	—	—	<20	—	E-05	400	10	E-04	<10	—	E-05
WELL 93		1972	103.00 - 105.00	ND	—	—									
WELL 93		1972	103.00 - 105.00	—	—	—	—	—	—	—	—	—	—	—	—
WELL 96		1972	103.17 - 104.69	ND	—	—	—	—	—	—	—	—	—	—	—
WELL 88		1971	105.00 - 108.00	30	1	E-05	ND	—	—	50	1	E-04	ND	—	—
WELL 90		1971	108.00 - 113.00	ND	—	—	<5	—	E-05	161	3	E-04	<3	—	E-05
WELL 96		1972	111.00 - 111.50	ND	—	—									
WELL 96		1972	110.00 - 112.92	ND	—	—	<7	—	E-05	ND	—	—	ND	—	—
WELL 96		1972	110.00 - 112.92	ND	—	—	<6	—	E-05	ND	—	—	<2	—	E-05
WELL 88		1971	111.00 - 112.50	ND	—	—	<10	—	E-05	280	7	E-04	<5	—	E-05
WELL 89		1971	110.00 - 115.00	ND	—	—	<7	—	E-05	128	5	E-04	<3	—	E-05
WELL 95		1972	112.00 - 113.33	ND	—	—	<5	—	E-05	231	4	E-04	<2	—	E-05
WELL 96		1972	122.75 - 124.75	ND	—	—	<10	—	E-05	530	10	E-04	<6	—	E-05
WELL 96		1972	124.00 - 124.25	ND	—	—									
WELL 92		1972	218.00 - 220.50	ND	—	—	<2	—	E-05	47	2	E-04	<1	—	E-05
WELL 96		1972	221.58 - 224.08	ND	—	—	<8	—	E-05	ND	—	—	<3	—	E-05
WELL 92		1972	223.00 - 225.50	ND	—	—	<70	—	E-05	81	3	E-04	<3	—	E-05
WELL 94		1972	226.25 - 226.75	120	3	E-05	<6	—	E-05	200	4	E-04	<3	—	E-05
WELL 93		1972	226.25 - 228.75	110	4	E-05	<10	—	E-05	210	4	E-04	<7	—	E-05
WELL 96		1972	226.58 - 229.25	ND	—	—	<30	—	E-05	1950	30	E-04	<20	—	E-05
WELL 95		1972	226.75 - 229.25	ND	—	—	<10	—	E-05	261	8	E-04	<5	—	E-05
WELL 87		1971	231.17 - 233.00	ND	—	—	<9	—	E-05	241	7	E-04	<5	—	E-05
WELL 87		1971	233.00 - 234.50	ND	—	—	<10	—	E-05	230	6	E-04	<5	—	E-05
WELL 95		1972	233.25 - 235.17	ND	—	—	<9	—	E-05	217	6	E-04	<5	—	E-05
WELL 91		1972	234.00 - 234.50	91	3	E-05	ND	—	—	180	3	E-04	ND	—	—

Dashed lines indicate that item was unknown (Depth), not calculated (Uncertainty), or not analyzed for (Result).

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	Bi-214			Fe-59			K-40			Mn-54		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP									
WELL 91		1972	233.75 - 238.25	ND	—	—	<5	—	E-05	ND	—	—	<3	—	E-05
WELL 91		1972	238.50 - 237.00	110	3	E-05	ND	—	—	210	3	E-04	ND	—	—
WELL 91		1972	238.25 - 238.75	ND	—	—	<5	—	E-05	ND	—	—	<3	—	E-05
WELL 91		1972	238.00	ND	—	—									
WELL 89		1971	241.58 - 243.17	ND	—	—	<6	—	E-05	242	4	E-04	<3	—	E-05
WELL 91		1972	243.17 - 243.83	110	3	E-05	ND	—	—	220	3	E-04	ND	—	—
WELL 91		1972	243.17 - 245.08	ND	—	—	ND	—	—	243	6	E-04	<10	—	E-05
WELL 91		1972	243.17 - 245.08	ND	—	—	<10	—	E-05	—	—	—	ND	—	—
WELL 94		1972	262.25 - 284.58	ND	—	—	<10	—	E-05	270	6	E-04	<5	—	E-05
WELL 89		1971	295.00 - 298.33	ND	—	—	<6	—	E-05	29	3	E-04	<3	—	E-05
WELL 89		1971	365.00 - 371.00	ND	—	—	<7	—	E-05	95	4	E-04	<3	—	E-05
WELL 90		1971	386.00 - 387.00	ND	—	—	<3	—	E-05	83	2	E-04	<2	—	E-05
WELL 89		1972	540.00 - 545.00	ND	—	—	<2	—	E-05	58	1	E-04	<1	—	E-05
WELL 89		1972	565.00 - 575.00	ND	—	—	<7	—	E-05	69	4	E-04	<4	—	E-05

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	Pb-214			Ru-106			Zr-95/Nb-95		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP	RESULT (nCi/g)	UNCERT. (nCi/g)	EXP	RESULT (nCi/g)	UNCERT. (nCi/g)	EXP
WELL 91		1972	1.67 - 2.17	—	—	—	ND	—	—	ND	—	—
WELL 91		1972	3.83 - 6.17	78	3	E-05	<2	—	E-04	<2	—	E-05
WELL 94		1972	5.00 - 8.67	—	—	—	<4	—	E-04	<5	—	E-05
WELL 92		1972	5.00 - 7.50	—	—	—	ND	—	—	ND	—	—
WELL 91		1972	7.83 - 8.92	—	—	—	ND	—	—	ND	—	—
WELL 96		1972	10.00 - 12.50	—	—	—	<6	—	E-04	<6	—	E-05
WELL 93		1972	13.83 - 14.00	—	—	—	<4	—	E-04	<10	—	E-05
WELL 95		1972	20.00 - 22.00	—	—	—	<4	—	E-04	<4	—	E-05
WELL 92		1972	88.50 - 90.00	—	—	—	<2	—	E-04	<3	—	E-05
WELL 93		1972	88.25 - 90.33	85	6	E-05	<20	—	E-04	<4	—	E-05
WELL 93		1972	88.25 - 90.33	—	—	—	<2	—	E-04	<3	—	E-05
WELL 94		1972	95.92 - 98.42	—	—	—	ND	—	—	ND	—	—
WELL 94		1972	95.92 - 102.00	—	—	—	<2	—	E-04	<2	—	E-05
WELL 93		1972	98.00 - 101.00	—	—	—	—	—	—	ND	—	—
WELL 96		1972	100.50 - 101.00	—	—	—	<2	—	E-04	<4	—	E-05
WELL 93		1972	101.00 - 103.00	—	—	—	<3	—	E-04	<8	—	E-05
WELL 93		1972	101.00 - 103.00	—	—	—	—	—	—	—	—	—
WELL 95		1972	103.08 - 104.58	—	—	—	<1	—	E-04	<10	—	E-05
WELL 93		1972	103.00 - 105.00	—	—	—	—	—	—	ND	—	—
WELL 96		1972	103.17 - 104.69	—	—	—	—	—	—	—	—	—
WELL 88		1971	105.00 - 108.00	ND	—	—	ND	—	—	ND	—	—
WELL 90		1971	108.00 - 113.00	73	3	E-05	<2	—	E-04	<3	—	E-05
WELL 96		1972	111.00 - 111.50	—	—	—	ND	—	—	ND	—	—
WELL 96		1972	110.00 - 112.92	—	—	—	<3	—	E-04	<3	—	E-05
WELL 96		1972	110.00 - 112.92	—	—	—	<2	—	E-04	<4	—	E-05
WELL 88		1971	111.00 - 112.50	143	6	E-05	<4	—	E-04	<5	—	E-05
WELL 89		1971	110.00 - 115.00	70	4	E-05	<3	—	E-04	<4	—	E-05
WELL 95		1972	112.00 - 113.33	—	—	—	<2	—	E-04	<2	—	E-05
WELL 96		1972	122.75 - 124.75	—	—	—	<6	—	E-04	<6	—	E-05
WELL 96		1972	124.00 - 124.25	—	—	—	ND	—	—	ND	—	—
WELL 92		1972	218.00 - 220.50	—	—	—	<1	—	E-04	<1	—	E-05
WELL 96		1972	221.58 - 224.08	—	—	—	<3	—	E-04	<5	—	E-05
WELL 92		1972	223.00 - 225.50	—	—	—	<3	—	E-04	<3	—	E-05
WELL 94		1972	226.25 - 228.75	—	—	—	<3	—	E-04	<3	—	E-05
WELL 93		1972	226.25 - 228.75	—	—	—	<2	—	E-04	<10	—	E-05
WELL 96		1972	226.58 - 229.25	—	—	—	<5	—	E-04	<10	—	E-05
WELL 95		1972	226.75 - 229.25	—	—	—	<4	—	E-04	<5	—	E-05
WELL 87		1971	231.17 - 233.00	124	6	E-05	<5	—	E-04	<5	—	E-05
WELL 87		1971	233.00 - 234.50	119	7	E-05	<5	—	E-04	<5	—	E-05
WELL 95		1972	233.25 - 235.17	—	—	—	<4	—	E-04	<4	—	E-05
WELL 91		1972	234.00 - 234.50	—	—	—	ND	—	—	ND	—	—

Dashed lines indicate that item was unknown (Depth), not calculated (Uncertainty), or not analyzed for (Result).

Summary of Radionuclide Data by Depth for the SDA Subsurface

SAMPLE LOCATION	SAMPLE ID	DATE	SAMPLE DEPTH (ft)	Pb-214			Ru-106			Zr-95/Nb-95		
				RESULT (nCi/g)	UNCERT. (nCi/g)	EXP	RESULT (nCi/g)	UNCERT. (nCi/g)	EXP	RESULT (nCi/g)	UNCERT. (nCi/g)	EXP
WELL 91		1972	233.75 - 236.25	—	—	—	<2	—	E-04	<3	—	E-05
WELL 91		1972	236.50 - 237.00	—	—	—	ND	—	—	ND	—	—
WELL 91		1972	238.25 - 238.75	—	—	—	<2	—	E-04	<3	—	E-05
WELL 91		1972	238.00	—	—	—	ND	—	—	ND	—	—
WELL 89		1971	241.58 - 243.17	139	4	E-05	<3	—	E-04	<3	—	E-05
WELL 91		1972	243.17 - 243.83	—	—	—	ND	—	—	ND	—	—
WELL 91		1972	243.17 - 245.08	110	5	E-05	ND	—	—	ND	—	—
WELL 91		1972	243.17 - 245.08	—	—	—	<4	—	E-04	<10	—	E-05
WELL 94		1972	262.25 - 264.58	—	—	—	<4	—	E-04	<5	—	E-05
WELL 89		1971	295.00 - 298.33	8	4	E-05	<4	—	E-04	<3	—	E-05
WELL 89		1971	365.00 - 371.00	53	4	E-05	<4	—	E-04	<3	—	E-05
WELL 90		1971	386.00 - 387.00	39	2	E-05	<2	—	E-04	<2	—	E-05
WELL 89		1972	540.00 - 545.00	ND	—	—	<1	—	E-04	<1	—	E-05
WELL 89		1972	565.00 - 575.00	25	4	E-05	<3	—	E-04	<4	—	E-05

Dashed lines indicate that item was unknown (Depth), not calculated (Uncert.), or not analyzed for (Result).

3.3 RWMC Environmental Surveillance Program Soil Radionuclide Data

The following list of RWMC Environmental Surveillance Program (ESP) annual reports contain tabulated data on surface soil radionuclides. [Complete references can be found in the previous Section 2.4.] The 1984 report is not included in the list because it presents the surface soil radionuclide data in a graphical format from which it is difficult to assign numerical values.

- 1978 Annual Report: TREE-1357
- 1979 Annual Report: EGG-2042
- 1980 Annual Report: EGG-2128
- 1981 Annual Report: EGG-2209
- 1986 Annual Report: EGG-2502
- 1988 Annual Report: EGG-2564

Several of these annual reports have figures showing sample locations inside the SDA. These are included for use in locating where the samples were taken. Each of the results from the annual reports are presented in turn.

3.3.1 1978 RWMC ESP Annual Report: TREE-1357

The following table copied from the 1978 RWMC ESP Annual Report does not have a corresponding map. The table presents analysis results for radionuclides in surficial soils.

TABLE VII
SUMMARY OF 1978 SOIL SAMPLE ANALYSIS OF THE RWMC^a

<u>Isotope</u>	<u>Number of Occurrences</u>	Maximum Concentration with Related Data		
		<u>Concentration</u> $(10^{-7} \mu\text{Ci/g})$	<u>Sample Number</u>	<u>Location</u>
²⁴¹ Am	11	357.0	7	NE area
¹⁴¹ Ce	21	6.6	3	NE corner
¹⁴⁴ Ce	2	45.4	19	New soil, east EWR
⁵⁸ Co	2	1.3 ^b	21	Tr 58
⁶⁰ Co	25	31.2	7	NE area
⁵¹ Cr	1	9.2 ^b	1	Pit 15 area
¹³⁴ Cs	10	3.4 ^b	11	TDA
¹³⁷ Cs	24	244.0	11	TDA
¹⁵² Eu	9	10.6	7	NE area
¹⁵⁴ Eu	2	2.8 ^b	21	Tr 58
¹⁸¹ Hf	25	4.4	23	SW area
⁵⁴ Mn	4	0.7 ^b	1	Pit 15 area
⁹⁵ Nb	23	4.0	3	NE corner
¹⁰³ Ru	24	3.5	7	NE area
¹⁰⁶ Ru	2	22.6 ^b	6	NE area
¹²⁵ Sb	8	2.3 ^b	3	NE corner
¹⁸² Ta	4	6.4 ^b	16	New soil, pit 4
⁹⁵ Zr	17	5.0 ^b	3	NE corner

a. Total samples = 25.

b. Indicates at detection limits.

3.3.2 1979 RWMC ESP Annual Report: EGG-2042

The figure below is copied from the 1979 RWMC ESP Annual Report and shows the locations of soil samples analyzed for radionuclides. A table of the sample results copied from the annual report is presented on the following page.

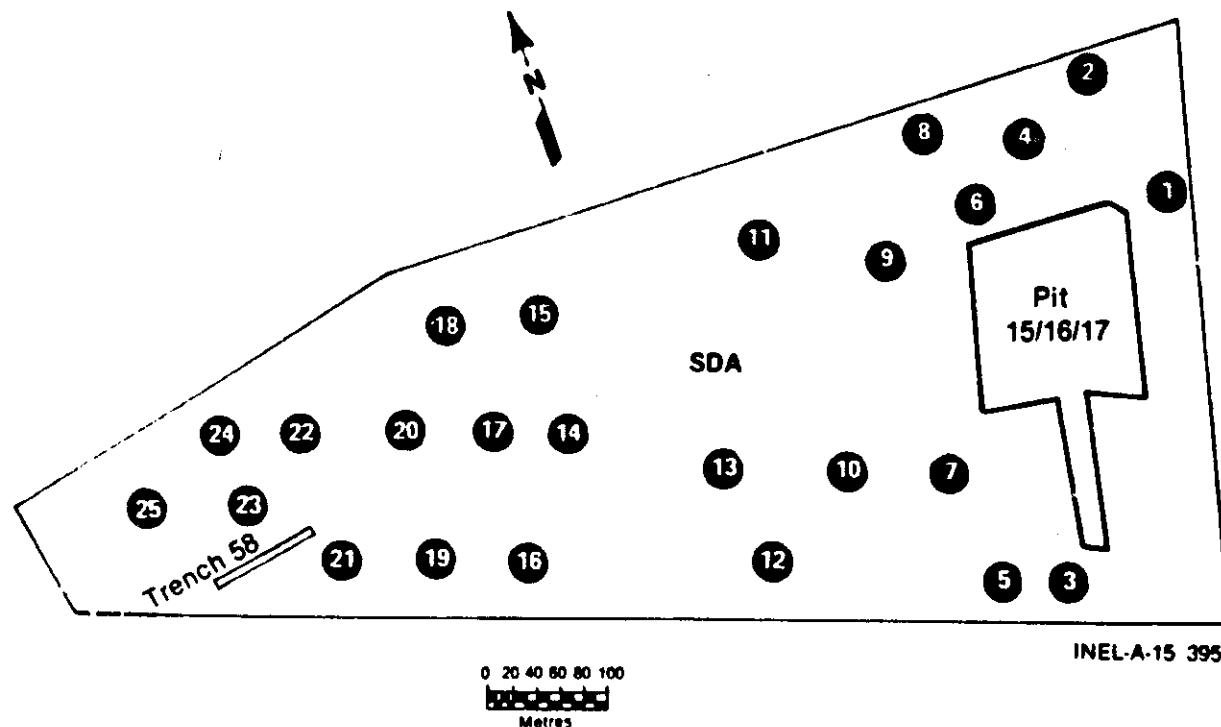


Table 8. Summary of 1979 soil gamma scan analysis of samples from the SDA

<u>Isotope</u>	<u>Number of Positive Samples^a</u>	<u>Maximum Concentrations</u>		
		<u>Concentration^b (10⁻⁷ μCi/g)^c</u>	<u>Location</u>	<u>Depth (cm)</u>
¹¹⁰ mAg	1	0.64 ± 0.37	24	30
²⁴¹ Am	23	380.00 ± 35.00	18	15
¹⁴¹ Ce	6	2.04 ± 0.67	20	15
¹⁴⁴ Ce	8	87.90 ± 21.90	14	15
⁵⁸ Co	3	1.34 ± 0.53	8	15
⁶⁰ Co	5	11.80 ± 1.10	8	0
⁵¹ Cr	2	10.20 ± 3.70	7	0
¹³⁴ Cs	6	0.81 ± 0.29	23	15
¹³⁷ Cs	35	30.20 ± 1.20	10	0
¹⁵² Eu	23	8.79 ± 3.16	25	15
¹⁵⁴ Eu	6	2.37 ± 0.98	6	0
⁵⁹ Fe	5	2.47 ± 0.71	21	0
¹⁸¹ Hf	10	2.61 ± 0.91	2	0
²⁰³ Hg	ND ^d	1.83	—	—
⁵⁴ Mn	9	1.53 ± 0.44	19	15
⁹⁵ Nb	1	1.59 ± 0.66	13	30
¹⁰³ Ru	1	0.70 ± 0.38	12	15
¹⁰⁶ Ru	5	7.95 ± 2.55	2	30
¹²⁴ Sb	1	0.78 ± 0.33	12	15
¹²⁵ Sb	7	3.45 ± 1.22	9	15
⁴⁶ Sc	2	0.84 ± 0.61	21	0
¹⁸² Ta	2	3.84 ± 1.46	10	0
⁹¹ Y(e)	5	943.0 ± 538.0	22	15

3.3.3 1980 RWMC ESP Annual Report: EGG-2128

The figure below is copied from the 1980 RWMC ESP Annual Report and shows the locations of soil samples analyzed for radionuclides. Tables of the sample results copied from the annual report are presented on the following pages.

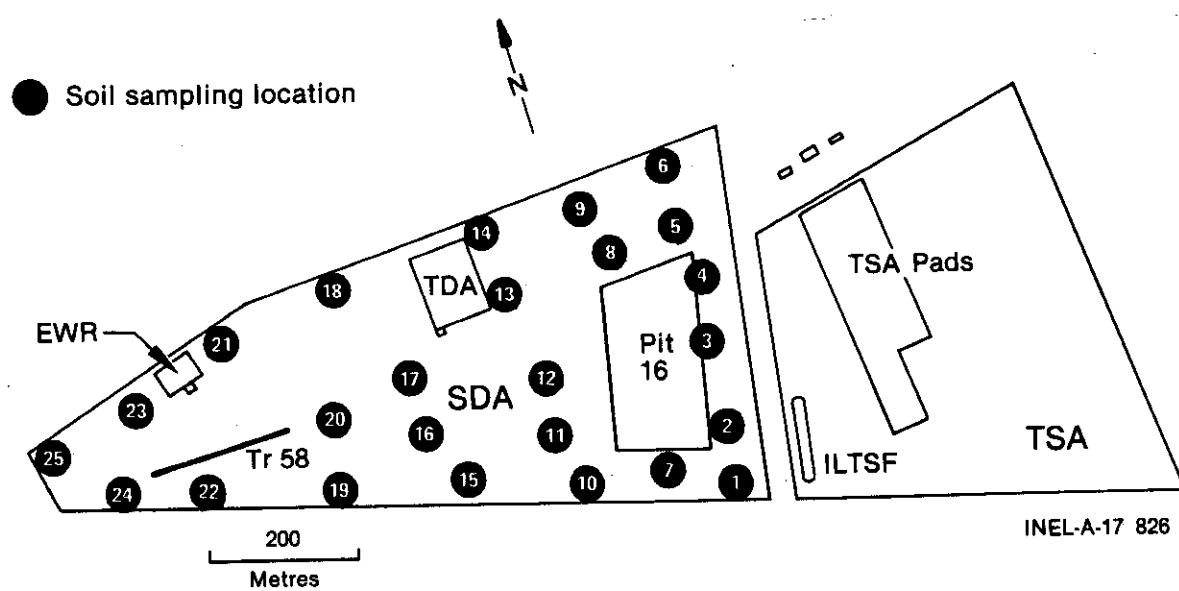


Table 10. Summary of 1980 soil gamma scan analysis of SDA samples

Isotope	Significant Occurrences (No.)	Measured Concentration (10^{-7} $\mu\text{Ci/g}$) ^{b,c}		Mean Concentration ^d (10^{-7} $\mu\text{Ci/g}$)	Maximum Concentrations	
		Minimum	Maximum		Location	Depth (cm)
^{110}mAg	1	NA	1.12 ± 0.32	NA	17	30
^{241}Am	26	2.37 ± 1.92	981.0 ± 82.0	60.2 ± 191.0	13	15
^{141}Ce	5	0.70 ± 0.40	4.81 ± 1.94	1.86 ± 1.36	10	30
^{144}Ce	3	30.3 ± 20.4	117.0 ± 36.0	63.7 ± 46.6	16	15
^{58}Co	4	0.41 ± 0.40	1.40 ± 0.45	1.02 ± 0.45	9	15
^{60}Co	12	1.25 ± 0.61	266.0 ± 8.0	24.3 ± 76.1	23	30
^{51}Cr	9	4.63 ± 2.76	19.3 ± 5.9	10.1 ± 5.00	22	0
^{134}Cs	3	0.87 ± 0.35	16.1 ± 0.57	1.14 ± 0.41	21	0
^{137}Cs	29	1.13 ± 0.43	327.0 ± 9.0	22.8 ± 64.8	23	30
^{152}Eu	29	1.56 ± 1.55	9.46 ± 2.29	4.51 ± 2.16	23	30
^{154}Eu	5	1.96 ± 1.03	3.20 ± 1.21	2.57 ± 0.46	23	30
^{59}Fe	1	NA	1.97 ± 0.82	NA	22	30
^{181}Hf	12	0.60 ± 0.28	2.37 ± 0.88	1.19 ± 0.49	1	0
^{203}Hg	3	1.13 ± 0.38	2.14 ± 0.63	1.68 ± 0.51	22	0
^{54}Mn	13	0.60 ± 0.44	1.74 ± 0.59	1.00 ± 0.34	15	30
^{95}Nb	0	NA	-- ^e	NA	--	--
^{103}Ru	6	0.77 ± 0.57	1.34 ± 1.09	1.01 ± 0.24	3	0
^{106}Ru	3	4.18 ± 2.40	7.22 ± 4.34	5.69 ± 1.52	15	0
^{124}Sb	3	0.76 ± 0.30	1.13 ± 0.43	0.89 ± 0.21	25	15
^{125}Sb	5	1.40 ± 0.67	4.56 ± 1.26	3.10 ± 1.16	4	30

Table 10. (continued)

Isotope	Significant Occurrences ^a (No.)	Measured Concentration ^{b,c} (10^{-7} $\mu\text{Ci/g}$)		Mean Concentration ^d (10^{-7} $\mu\text{Ci/g}$)	Maximum Concentrations	
		Minimum	Maximum		Location	Depth (cm)
^{46}Sc	3	0.86 ± 0.39	1.78 ± 0.65	1.25 ± 0.48	22	15
^{182}Ta	8	2.23 ± 1.44	5.18 ± 2.0	3.93 ± 0.96	18	15
^{91}Y	1	NA	523.0 ± 164.0	NA	22	30
^{65}Zn	0	NA	-- ^e	NA	--	--
^{95}Zr	3	1.55 ± 0.93	4.00 ± 2.37	2.51 ± 1.31	19	0

Total samples analyzed = 75

- a. Number of samples with concentrations significant at the 95% confidence level.
- b. Approximate detection limit.
- c. Analytical results are $\pm 2\sigma$.
- d. Mean $\pm 2\sigma$. Mean concentrations were computed by ignoring reported "less than" data and computing values on significant concentrations (at the 95% confidence level) only.
- e. Below detection limits.

Table 11. Summary of 1980 isotopic Pu analyses of SDA soil samples

<u>Location</u>	<u>Depth (cm)</u>	<u>^{238}Pu^{a,b} (10^{-6} $\mu\text{Ci/g}$)</u>	<u>$^{239,240}\text{Pu}$^{a,b} (10^{-6} $\mu\text{Ci/g}$)</u>
2	0	--c	0.140 \pm 0.016
2	30	--c	0.177 \pm 0.014
4	15	--c	1.090 \pm 0.040
5	0	0.009 \pm 0.008	0.670 \pm 0.040
5	30	--c	0.118 \pm 0.010
6	15	--c	0.550 \pm 0.020
7	0	--c	0.175 \pm 0.016
7	15	--c	0.012 \pm 0.006
8	0	0.017 \pm 0.014	0.210 \pm 0.020
11	15	--c	0.061 \pm 0.010
13	0	0.022 \pm 0.008	0.990 \pm 0.040
13	15	0.390 \pm 0.020	17.550 \pm 0.600
13	30	0.115 \pm 0.012	3.050 \pm 0.120
14	0	--c	0.860 \pm 0.040
14	15	0.030 \pm 0.020	0.480 \pm 0.040
15	0	--c	0.112 \pm 0.010
16	0	--c	0.078 \pm 0.012
17	0	--c	0.080 \pm 0.010
18	0	--c	0.270 \pm 0.020
18	15	0.014 \pm 0.012	0.040 \pm 0.010
22	15	--c	0.310 \pm 0.020
22	30	--c	0.112 \pm 0.010
23	0	--c	0.022 \pm 0.016
24	30	0.059 \pm 0.010	4.570 \pm 0.016

Total samples analyzed = 26

a. Analytical results are $\pm 2\sigma$.b. Approximate detection limit $3 \times 10^{-9} \mu\text{Ci/g}$.

c. Below detection limits.

3.3.4 1981 RWMC ESP Annual Report: EGG-2209

The figure below is copied from the 1981 RWMC ESP Annual Report and shows the locations of soil samples analyzed for radionuclides. Tables of the sample results copied from the annual report are presented on the following pages.

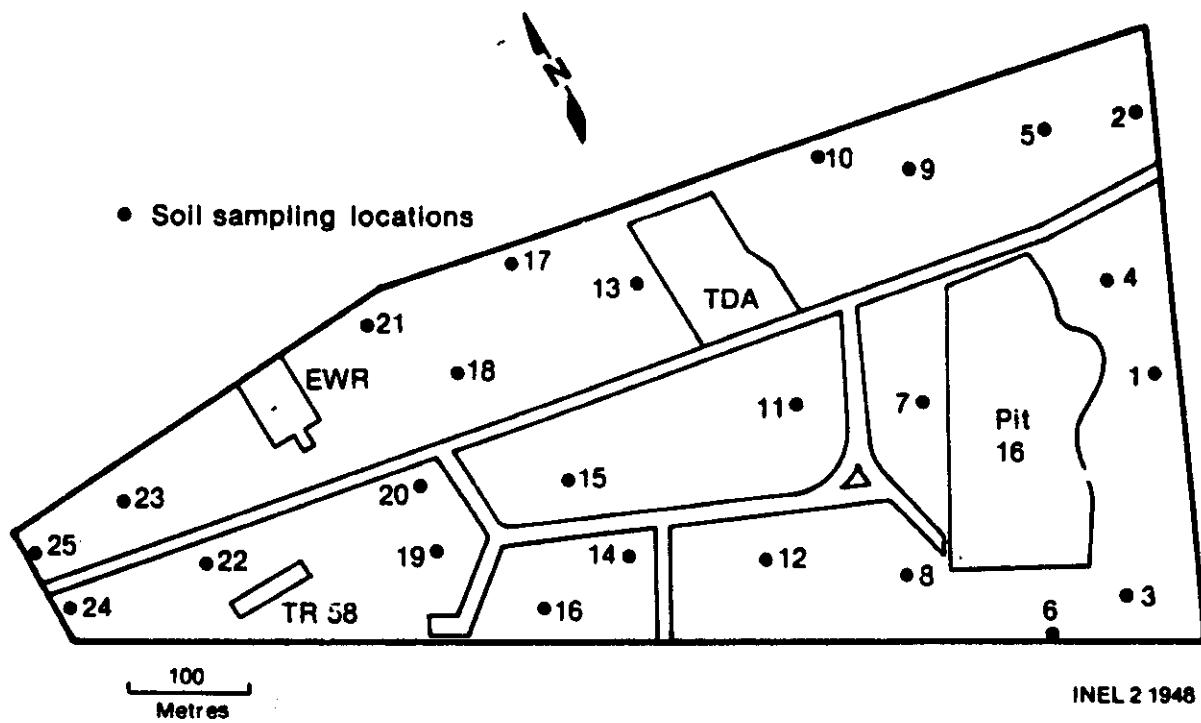


Table 10. Summary of 1981 plutonium analyses of SDA soil samples

<u>Location</u>	<u>Depth (cm)</u>	<u>^{238}Pu (10^{-6} $\mu\text{Ci/g}$)^{a,b}</u>	<u>$^{239,240}\text{Pu}$ (10^{-6} $\mu\text{Ci/g}$)^{a,b}</u>
2	30	<0.004	0.210 \pm 0.018
5	0	<0.004	0.161 \pm 0.014
5	15	0.008 \pm 0.010	0.900 \pm 0.040
5	30	<0.004	0.540 \pm 0.120
6	0	0.019 \pm 0.010	1.860 \pm 0.060
7	0	<0.005	0.018 \pm 0.010
7	15	<0.005	0.083 \pm 0.014
7	30	<0.004	0.050 \pm 0.010
8	0	<0.005	0.008 \pm 0.010
8	15	<0.005	0.210 \pm 0.020
8	30	<0.007	0.300 \pm 0.040
9	0	0.080 \pm 0.020	4.040 \pm 0.180
9	15	0.040 \pm 0.020	4.000 \pm 0.200
9	30	<0.010	0.230 \pm 0.040
10	0	0.103 \pm 0.018	5.900 \pm 0.200
10	15	0.008 \pm 0.014	0.890 \pm 0.060
10	30	<0.007	0.410 \pm 0.040
11	0	<0.007	0.010 \pm 0.010
12	15	<0.009	0.240 \pm 0.060
13	0	0.180 \pm 0.100	9.400 \pm 1.400
19	0	<0.005	0.040 \pm 0.008
19	30	<0.005	0.156 \pm 0.018
20	30	<0.007	<0.006

Total Samples Analyzed = 23

a. Analytical results are $\pm 2 \sigma$.b. Approximate analytical detection limit $0.001 \times 10^{-6} \mu\text{Ci/g}$.

Table 9. Summary of 1981 SDA soil gamma spectroscopy results

Radionuclide	Number of Positive Samples	Maximum Concentration			Approximate ^b Detection Limit (10^{-7} $\mu\text{Ci/g}$)
		Concentration ^a (10^{-7} $\mu\text{Ci/g}$)	Location	Depth (cm)	
⁴⁶ Sc	3	1.00 \pm 0.39	15	0	1
⁵¹ Cr	3	6.92 \pm 2.61	14	0	20
⁵⁴ Mn	10	1.56 \pm 0.47	3	30	1
⁵⁸ Co	2	1.71 \pm 0.50	11	30	1
⁵⁹ Fe	2	1.37 \pm 0.71	24	0	3
⁶⁰ Co	5	5.47 \pm 0.89	1	30	1
⁶⁵ Zn	1	1.02 \pm 0.50	16	15	2
⁹⁵ Nb	1	0.82 \pm 0.27	25	0	2
⁹⁵ Zr	4	2.17 \pm 0.64	15	15	2
¹⁰³ Ru	8	1.05 \pm 0.37	10	0	1
¹⁰⁶ Ru	3	7.42 \pm 2.84	19	30	6
¹¹⁰ Ag	2	0.49 \pm 0.32	23	0	1
¹²⁴ Sb	3	0.53 \pm 0.24	14	30	1
¹²⁵ Sb	6	7.35 \pm 1.31	1	0	2
¹³⁴ Cs	1	0.68 \pm 0.33	3	0	1
¹³⁷ Cs	36	48.20 \pm 1.30	19	15	
¹⁴¹ Ce	1	0.65 \pm 0.27	12	15	1
¹⁴⁴ Ce	8	1.16 \pm 0.47	15	15	2
¹⁵² Eu	30	8.22 \pm 2.61	3	0	50
					4
¹⁵⁴ Eu	2	1.82 \pm 0.64	24	15	2
¹⁵⁵ Eu	18	3.23 \pm 1.46	6	0	2
¹⁸¹ Hf	1	0.30 \pm 0.27	1	15	1
¹⁸² Ta	3	3.26 \pm 1.40	4	30	4
²⁰³ Hg	1	0.90 \pm 0.39	12	30	1
²⁴¹ Am	26	511.00 \pm 43.00	9	15	4

Total Samples = 75

a. Analytical results $\pm 2 \sigma$.b. The detection limit is defined as 2σ above mean background.

3.3.5 1986 RWMC ESP Annual Report: EGG-2502

The figure below is copied from the 1986 RWMC ESP Annual Report and shows the general locations of soil samples analyzed for radionuclides. A table of the sample results copied from the annual report are presented on the following page.

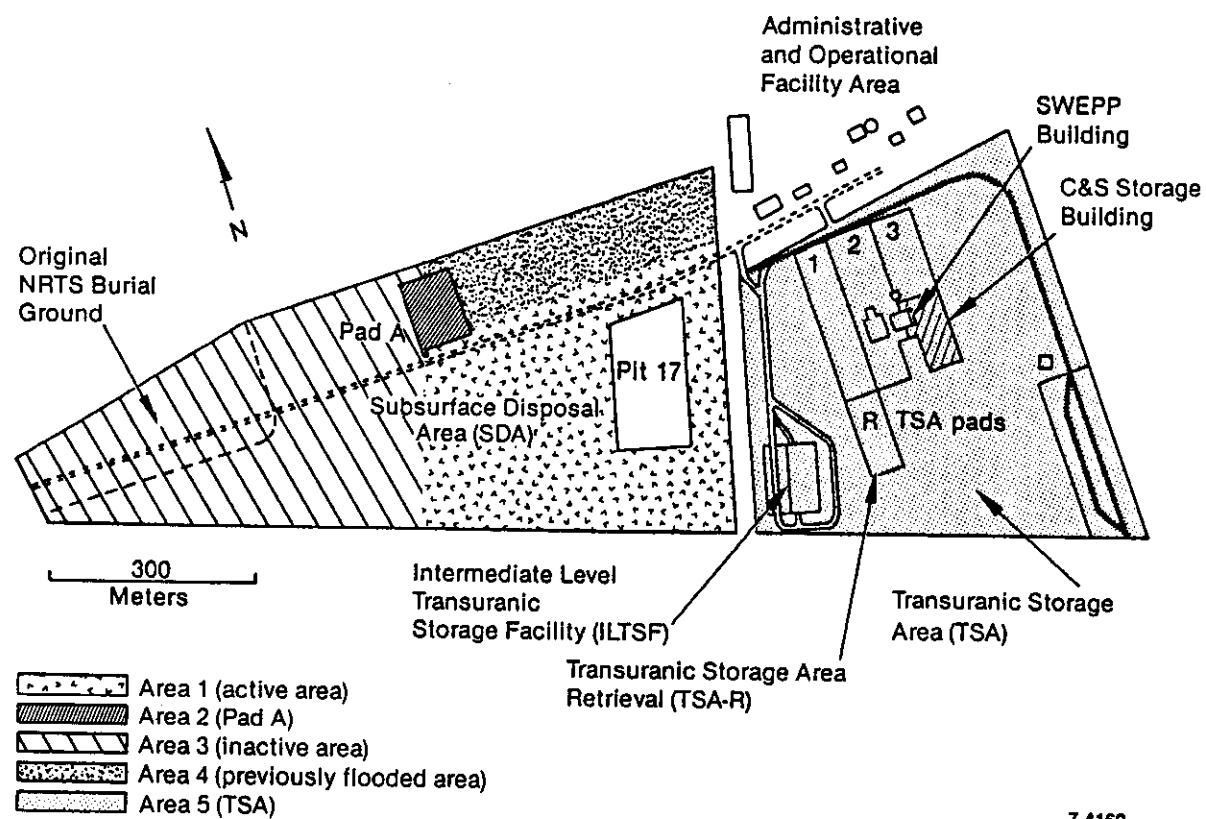


Table 9. RWMC 1986 soil activity concentrations^a

<u>Location^b</u>	Pu-239,240 Soil Concentrations 10^{-7} ($\mu\text{Ci/g}$)	Am-241 Soil Concentrations 10^{-7} ($\mu\text{Ci/g}$)	U-234 Soil Concentrations 10^{-7} ($\mu\text{Ci/g}$)
SDA active area	—	—	— ^c
	3.3 ± 0.3	18 ± 2	5.0 ± 1.0
	5.2 ± 0.4	7.9 ± 0.6	6.0 ± 1.0
	5.0 ± 0.4	7.1 ± 0.4	4.0 ± 1.0
	0.6 ± 0.1	— ^c	
SDA Pad A	4.2 ± 0.6	7.1 ± 0.4	6.0 ± 1.0
	3.6 ± 0.3	5.0 ± 1.0	5.0 ± 1.0
	— ^c	1.5 ± 0.1	6.0 ± 1.0
	— ^c	1.4 ± 0.1	5.0 ± 1.0
	1.3 ± 0.2	3.6 ± 0.3	
SDA Previously Flooded Areas	4.7 ± 0.5	2.8 ± 0.1	5.0 ± 1.0
	24 ± 2	7.5 ± 0.8	5.0 ± 1.0
	24 ± 3	81 ± 3	6.0 ± 1.0
	35 ± 3	34 ± 3	— ^c
	48 ± 3	45 ± 8	— ^c
SDA Inactive Area	2.4 ± 0.2	1.6 ± 0.2	5.0 ± 1.0
TSA	2.2 ± 0.2	4.7 ± 0.3	6.0 ± 1.0
Control	0.9 ± 0.2	4.4 ± 0.5	6.0 ± 1.0
	0.8 ± 0.2	3.9 ± 0.4	6.0 ± 1.0
	— ^c	— ^c	4.0 ± 1.0
	— ^c	— ^c	— ^c

a. Results are for subsamples in each major area.

b. See Figure 23 for major areas.

c. None detected.

3.3.6 1988 RWMC ESP Annual Report: EGG-2564

The figure below is copied from the 1988 RWMC ESP Annual Report and shows the general locations of soil samples analyzed for radionuclides. A table of the sample results copied from the annual report are presented on the following page.

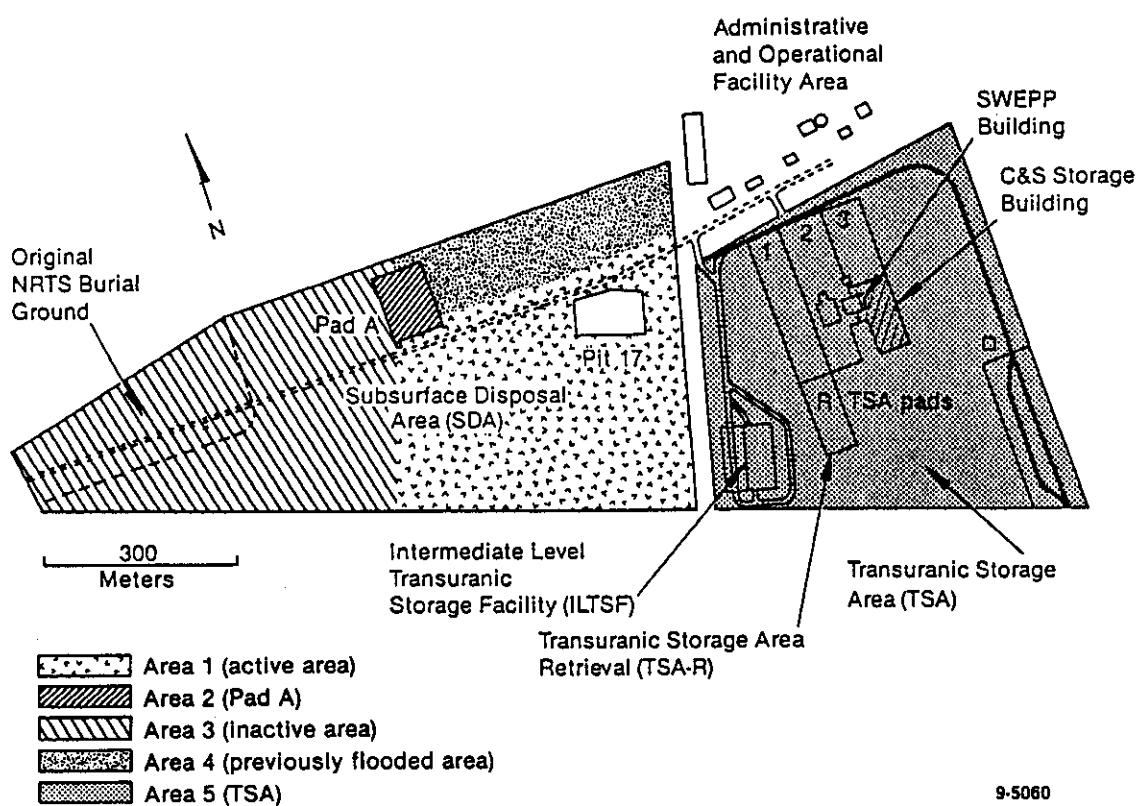


Table 6. RWMC soil specific alpha- and beta-emitting radiochemical analysis results.^a

a. Results are for subsamples in each major area.

b. See Figure 21 for major area location.

c. "—" indicates radionuclide is below the limit of detection ($3 \times 10^{-7} \mu\text{Ci/g}$ for Sr-90 and $3 \times 10^{-9} \mu\text{Ci/g}$ for Pu-238, Pu-239,-240, and Am-241).

3.4 Subsurface Investigation Program Soil Radionuclide Data

The two tables on the following pages present radionuclide sampling results from soil samples from Shallow Drilling portion of the Subsurface Investigation Program during FY-85 and FY-86. These samples are not included in the table presented in Section 3.2 above. Locations of the boreholes from which the samples were taken are described in the EDF by C.L. Bishop and D.L. McElroy for SDA Moisture Monitoring Network and Data Description (EDF# ER-WAG7-65). Both of the following tables were originally presented in the FY-87 Subsurface Investigation Program report. The complete reference for that report is:

Laney, P. T., S. C. Minkin, R. G. Baca, D. L. McElroy, J. M. Hubbell, L. C. Hull, B. F. Russell, G. J. Stormberg, and J. R. Pittman, 1988, Annual Progress Report: FY-1987 Subsurface Investigations Program at the Radioactive Waste Management Complex of the Idaho National Engineering Laboratory, DOE/ID-10183.

Two samples collected from the Subsurface Investigation Program are not included in the following tables. They were for sediments that had infilled basalt fractures above and below the B-C interbed in borehole 88-1D (Minkin, 1988). The B-C interbed was encountered at 103 feet below land surface and was 1.5 to 2 ft thick at this location. The sample from above the interbed could be seen to be undisturbed while the sample below the interbed could be seen to be a mixture of interbed material that was "pushed or blown" into the underlying fracture. Both of these samples yielded positive results for Pu-239 and Am-241. They were not included in the SIP program results because they were not collected according to standard procedures for sediment core analysis, nor could they be since they were fracture infillings. An independent analysis by a second laboratory was never attempted to confirm the positive results for these samples because they were not collected according to standard procedures. Nevertheless, the two sample results are presented immediately below for completeness. Sample 22R01 is from below the interbed and 21R2 is from above the interbed

Table 7: Fracture Infilling Radionuclide Data

Sample Number	Nuclide	Activity	Units
8801D22R01	Pu-239	1.4 +/- 0.2 ($\times 10^{-2}$)	pCi/g
8801D22R01	Pu-238	1.9 +/- 1.1 ($\times 10^{-3}$)	pCi/g
8801D22R01	Am-241	3 +/- 3 ($\times 10^{-3}$)	pCi/g
8801D21R2	Pu-239	9.4 +/- 0.5 ($\times 10^{-2}$)	pCi/g
8801D21R2	Pu-238	2.1 +/- 0.9 ($\times 10^{-3}$)	pCi/g
8801D21R2	Am-241	2.3 +/- 0.3 ($\times 10^{-2}$)	pCi/g

The reference is: Minkin, S.C., EG&G Correspondence to S. A. Morreale, RADIOCHEMICAL ANALYSES FROM BASALT FRACTURE FILLINGS IN BOREHOLE NO. 88-1D, SCM-8-88, July 8, 1988.

TABLE 18. RWMC SEDIMENT SAMPLE RADIOCHEMICAL ANALYSIS RESULTS: SAMPLE FROM THE FY-1985 SHALLOW DRILLING PROGRAM

Sample	Depth (in.)	^{238}Pu ($\mu\text{Ci/g}$)	$^{239,240}\text{Pu}$ ($\mu\text{Ci/g}$)	^{241}Am ($\mu\text{Ci/g}$)	^{90}Sr ($\mu\text{Ci/g}$)	^{60}Co ($\mu\text{Ci/g}$)	^{137}Cs ($\mu\text{Ci/g}$)	^{154}Eu ($\mu\text{Ci/g}$)
<u>Auger Hole W01</u>								
C-11M	20	$2.0 \pm 1.4 \text{ E-09}$	$-6 \pm 8 \text{ E-10}$	$-8 \pm 8 \text{ E-10}$	$3.1 \pm 1.5 \text{ E-08}$	$-14 \pm 8 \text{ E-09}$	$9 \pm 9 \text{ E-09}$	$-2.2 \pm 1.0 \text{ E-08}$
C-12M	41	$1.7 \pm 1.3 \text{ E-09}$	$1.0 \pm 1.3 \text{ E-09}$	$-2 \pm 10 \text{ E-10}$	$5.8 \pm 1.9 \text{ E-08*}$	$20 \pm 8 \text{ E-09}$	$5 \pm 9 \text{ E-09}$	$-17 \pm 7 \text{ E-09}$
C-13M	62	$2.1 \pm 1.4 \text{ E-09}$	$-6 \pm 8 \text{ E-10}$	$6 \pm 10 \text{ E-10}$	$0.8 \pm 1.6 \text{ E-08}$	$-4 \pm 9 \text{ E-09}$	$0 \pm 1.0 \text{ E-08}$	$-1.1 \pm 1.8 \text{ E-08}$
C-14M	83	$1.1 \pm 0.9 \text{ E-09}$	$2.2 \pm 1.3 \text{ E-09}$	$1.3 \pm 1.6 \text{ E-09}$	$9 \pm 3 \text{ E-08}$	$0 \pm 9 \text{ E-07}$	$23 \pm 8 \text{ E-09}$	$3.1 \pm 1.9 \text{ E-08}$
<u>Auger Hole W02</u>								
C-24M	20	$4.5 \pm 0.4 \text{ E-08*}$	$2.56 \pm 0.14 \text{ E-06*}$	$2.46 \pm 0.11 \text{ E-06*}$	$5.2 \pm 0.3 \text{ E-07*}$	$2.0 \pm 1.0 \text{ E-08}$	$180 \pm 7 \text{ E-08*}$	$1 \pm 9 \text{ E-09}$
C-25M	41	$4 \pm 2 \text{ E-09}$	$-7 \pm 10 \text{ E-10}$	$9 \pm 12 \text{ E-10}$	$1.1 \pm 1.6 \text{ E-08}$	$11 \pm 7 \text{ E-09}$	$4 \pm 8 \text{ E-09}$	$0.5 \pm 1.7 \text{ E-08}$
C-26M	62	$2.9 \pm 1.5 \text{ E-09}$	$7 \pm 13 \text{ E-10}$	$-7 \pm 10 \text{ E-10}$	$4.7 \pm 1.8 \text{ E-08}$	$1.4 \pm 1.5 \text{ E-08}$	$-4 \pm 8 \text{ E-09}$	$-5 \pm 2 \text{ E-08}$
C-27M	83	$4.1 \pm 0.4 \text{ E-08*}$	$1.44 \pm 0.04 \text{ E-06*}$	$2.5 \pm 1.1 \text{ E-09}$	$2.9 \pm 1.6 \text{ E-08}$	$10 \pm 7 \text{ E-09}$	$8 \pm 8 \text{ E-09}$	$-1 \pm 7 \text{ E-09}$
C-28M	104	$2.5 \pm 1.6 \text{ E-09}$	$-6 \pm 9 \text{ E-10}$	$-3 \pm 9 \text{ E-10}$	$4 \pm 2 \text{ E-08}$	$0 \pm 8 \text{ E-09}$	$-2 \pm 3 \text{ E-08}$	$-6 \pm 2 \text{ E-08}$
C-29M	125	$2 \pm 2 \text{ E-09}$	$1.8 \pm 1.4 \text{ E-09}$	$8 \pm 10 \text{ E-10}$	$-0.3 \pm 1.7 \text{ E-08}$	$-9 \pm 9 \text{ E-09}$	$3 \pm 9 \text{ E-09}$	$-1.9 \pm 1.5 \text{ E-08}$
C-30M	146	$2.4 \pm 1.5 \text{ E-09}$	$3 \pm 9 \text{ E-10}$	$-1.5 \pm 0.8 \text{ E-09}$	$0.3 \pm 1.7 \text{ E-08}$	$2 \pm 9 \text{ E-09}$	$-4 \pm 9 \text{ E-09}$	$-1 \pm 3 \text{ E-08}$
C-31M	166	$4 \pm 2 \text{ E-09}$	$4 \pm 13 \text{ E-10}$	$1 \pm 9 \text{ E-10}$	$3.2 \pm 1.8 \text{ E-08}$	$6 \pm 2 \text{ E-08*}$	$3.0 \pm 1.7 \text{ E-08}$	$-0.8 \pm 1.6 \text{ E-08}$
<u>Auger Hole W03</u>								
C-32M	20	$1.3 \pm 0.2 \text{ E-08*}$	$5.5 \pm 0.2 \text{ E-07*}$	$1.63 \pm 0.06 \text{ E-06*}$	$2.0 \pm 0.2 \text{ E-07*}$	$2 \pm 8 \text{ E-09}$	$10.0 \pm 1.1 \text{ E-08*}$	$7 \pm 3 \text{ E-09}$
C-33M	41	$2.6 \pm 1.4 \text{ E-09}$	$3 \pm 9 \text{ E-10}$	$-6 \pm 12 \text{ E-10}$	$2.7 \pm 0.2 \text{ E-07*}$	$-0.4 \pm 1.8 \text{ E-08}$	$-14 \pm 7 \text{ E-09}$	$-4 \pm 3 \text{ E-09}$
C-34M	60	$1 \pm 3 \text{ E-09}$	$3 \pm 3 \text{ E-09}$	$6 \pm 11 \text{ E-10}$	$5 \pm 2 \text{ E-08}$	$0.7 \pm 1.9 \text{ E-08}$	$2.6 \pm 1.2 \text{ E-08}$	$1.4 \pm 1.4 \text{ E-08}$
C-35M	79	$2.3 \pm 1.6 \text{ E-09}$	$-1.2 \pm 1.0 \text{ E-09}$	$-1 \pm 9 \text{ E-10}$	$0.9 \pm 1.6 \text{ E-08}$	$-6 \pm 8 \text{ E-09}$	$1 \pm 8 \text{ E-09}$	$-1.1 \pm 1.4 \text{ E-08}$
C-36M	100	$2.2 \pm 1.5 \text{ E-09}$	$-3 \pm 10 \text{ E-10}$	$1.3 \pm 0.3 \text{ E-08*}$	$6.6 \pm 1.8 \text{ E-08}$	$-22 \pm 7 \text{ E-09}$	$-3 \pm 8 \text{ E-09}$	$-7 \pm 2 \text{ E-08}$
C-37M	121	$1.3 \pm 1.9 \text{ E-09}$	$1.3 \pm 1.3 \text{ E-09}$	$7 \pm 10 \text{ E-10}$	$3.8 \pm 1.7 \text{ E-08}$	$-3 \pm 9 \text{ E-09}$	$-9 \pm 9 \text{ E-09}$	$-6 \pm 4 \text{ E-08}$
<u>Auger Hole W04</u>								
C-38M	20	$8.8 \pm 1.8 \text{ E-09*}$	$8.2 \pm 0.5 \text{ E-08*}$	$7.4 \pm 0.5 \text{ E-08*}$	$1.0 \pm 1.6 \text{ E-08}$	$24 \pm 8 \text{ E-09*}$	$4.2 \pm 1.0 \text{ E-08*}$	$-3 \pm 3 \text{ E-09}$
C-39M	41	$5.2 \pm 1.7 \text{ E-09*}$	$2.8 \pm 0.3 \text{ E-08*}$	$9.2 \pm 0.5 \text{ E-08*}$	$1 \pm 2 \text{ E-08}$	$-2 \pm 6 \text{ E-09}$	$15 \pm 7 \text{ E-09}$	$-1.0 \pm 1.2 \text{ E-08}$
C-40M	62	$1.7 \pm 1.6 \text{ E-09}$	$1.0 \pm 1.1 \text{ E-09}$	$-1 \pm 8 \text{ E-10}$	$1.9 \pm 0.3 \text{ E-07}$	$-0.9 \pm 1.3 \text{ E-08}$	$-5 \pm 8 \text{ E-09}$	$-9 \pm 3 \text{ E-09}$
C-41M	83	$0.8 \pm 1.1 \text{ E-09}$	$1.1 \pm 1.1 \text{ E-09}$	$1.2 \pm 1.7 \text{ E-09}$	$0 \pm 4 \text{ E-08}$	$-7 \pm 8 \text{ E-09}$	$5 \pm 9 \text{ E-09}$	$-0 \pm 2 \text{ E-08}$
C-42M	104	$0.9 \pm 1.5 \text{ E-09}$	$0.4 \pm 1.2 \text{ E-09}$	$-0.6 \pm 1.3 \text{ E-09}$	$2 \pm 3 \text{ E-08}$	$-2 \pm 9 \text{ E-09}$	$13 \pm 7 \text{ E-09}$	$9 \pm 3 \text{ E-09}$
C-43M	125	$0.5 \pm 1.3 \text{ E-09}$	$0.5 \pm 1.1 \text{ E-09}$	$-0.1 \pm 1.2 \text{ E-09}$	$2 \pm 3 \text{ E-08}$	$5 \pm 9 \text{ E-09}$	$16 \pm 9 \text{ E-09}$	$-0 \pm 1.6 \text{ E-08}$
C-44M	148	$2.0 \pm 1.1 \text{ E-09}$	$6 \pm 7 \text{ E-10}$	$-2.0 \pm 1.0 \text{ E-09}$	$1.1 \pm 0.4 \text{ E-07}$	$-1 \pm 8 \text{ E-09}$	$5 \pm 8 \text{ E-09}$	$0.6 \pm 1.4 \text{ E-08}$
C-45M	171	$1.7 \pm 1.5 \text{ E-09}$	$0.8 \pm 1.3 \text{ E-09}$	$-0.3 \pm 1.1 \text{ E-09}$	$9 \pm 3 \text{ E-08}$	$-0.7 \pm 1.5 \text{ E-08}$	$-2.2 \pm 1.9 \text{ E-08}$	$1 \pm 3 \text{ E-08}$
C-46M	193	$1.4 \pm 1.4 \text{ E-09}$	$1.0 \pm 1.4 \text{ E-09}$	$-0.2 \pm 1.0 \text{ E-09}$	$2 \pm 3 \text{ E-08}$	$16 \pm 3 \text{ E-08*}$	$6 \pm 3 \text{ E-08}$	$-4 \pm 4 \text{ E-08}$
C-47M	214	$0.5 \pm 1.1 \text{ E-09}$	$8 \pm 9 \text{ E-10}$	$0.0 \pm 1.2 \text{ E-09}$	$6 \pm 3 \text{ E-08}$	$-6 \pm 7 \text{ E-09}$	$11 \pm 7 \text{ E-09}$	$-0.8 \pm 1.6 \text{ E-08}$
C-48M	236	$0.8 \pm 1.2 \text{ E-09}$	$8 \pm 9 \text{ E-10}$	$-0.2 \pm 1.1 \text{ E-09}$	$4 \pm 4 \text{ E-08}$	$-1 \pm 8 \text{ E-09}$	$16 \pm 8 \text{ E-09}$	$0.4 \pm 1.6 \text{ E-08}$
C-49M	258	$0.7 \pm 1.0 \text{ E-09}$	$1.9 \pm 1.5 \text{ E-09}$	$-0.1 \pm 1.2 \text{ E-09}$	$7.4 \pm 1.9 \text{ E-08*}$	$-23 \pm 9 \text{ E-09}$	$3 \pm 7 \text{ E-09}$	$1.1 \pm 1.1 \text{ E-08}$
C-50M	279	$3.1 \pm 1.7 \text{ E-09}$	$0.8 \pm 1.0 \text{ E-09}$	$-0.1 \pm 1.2 \text{ E-09}$	$4 \pm 4 \text{ E-08}$	$4 \pm 9 \text{ E-09}$	$7 \pm 8 \text{ E-09}$	$0 \pm 1.7 \text{ E-08}$

TABLE 18. (continued)

Sample	Depth (in.)	^{238}Pu ($\mu\text{Ci/g}$)	$^{239},^{240}\text{Pu}$ ($\mu\text{Ci/g}$)	^{241}Am ($\mu\text{Ci/g}$)	^{90}Sr ($\mu\text{Ci/g}$)	^{60}Co ($\mu\text{Ci/g}$)	^{137}Cs ($\mu\text{Ci/g}$)	^{154}Eu ($\mu\text{Ci/g}$)
<u>Auger Hole W08</u>								
C-109M	18	$1.3 \pm 1.1 \text{ E-09}$	$0 \pm 9 \text{ E-09}$	$0 \pm 9 \text{ E-09}$	$5.4 \pm 1.9 \text{ E-08}$	$-16 \pm 9 \text{ E-09}$	$6.4 \pm 1.2 \text{ E-08*}$	$1 \pm 5 \text{ E-08}$
C-110M	39	$3.0 \pm 1.4 \text{ E-09}$	$1.3 \pm 0.2 \text{ E-08*}$	$5.3 \pm 0.4 \text{ E-08*}$	$3 \pm 3 \text{ E-08}$	$-1.0 \pm 1.0 \text{ E-08}$	$4.7 \pm 1.1 \text{ E-08*}$	$-2 \pm 3 \text{ E-08}$
C-111M	60	$5 \pm 2 \text{ E-09}$	$2.35 \pm 0.10 \text{ E-07*}$	$1.16 \pm 0.03 \text{ E-06*}$	$7.9 \pm 0.4 \text{ E-07*}$	$36 \pm 1.7 \text{ E-08*}$	$55 \pm 3 \text{ E-08*}$	$0.2 \pm 1.0 \text{ E-08}$
C-112M	81	$1.3 \pm 1.7 \text{ E-09}$	$5 \pm 9 \text{ E-10}$	$-0.2 \pm 1.1 \text{ E-09}$	$5 \pm 3 \text{ E-08}$	$0.2 \pm 1.1 \text{ E-08}$	$-5 \pm 8 \text{ E-09}$	$-4 \pm 2 \text{ E-08}$
C-113M	102	$4.4 \pm 1.7 \text{ E-09}$	$1.2 \pm 1.4 \text{ E-09}$	$-3 \pm 9 \text{ E-10}$	$2 \pm 2 \text{ E-08}$	$-7 \pm 8 \text{ E-09}$	$5 \pm 8 \text{ E-09}$	$0.8 \pm 1.2 \text{ E-08}$
C-114M	122	$1.8 \pm 1.3 \text{ E-09}$	$8 \pm 9 \text{ E-10}$	$0 \pm 9 \text{ E-10}$	$0 \pm 3 \text{ E-09}$	$-1 \pm 7 \text{ E-09}$	$8 \pm 8 \text{ E-09}$	$-1 \pm 3 \text{ E-08}$
C-115M	142	$0.7 \pm 1.3 \text{ E-09}$	$9 \pm 9 \text{ E-10}$	$-0.2 \pm 1.0 \text{ E-09}$	$-3 \pm 3 \text{ E-08}$	$0.9 \pm 1.0 \text{ E-08}$	$0 \pm 1.0 \text{ E-08}$	$-2 \pm 3 \text{ E-08}$
C-116M	163	$0.5 \pm 1.0 \text{ E-09}$	$7 \pm 8 \text{ E-10}$	$0.4 \pm 1.2 \text{ E-09}$	$-2 \pm 4 \text{ E-08}$	$0.9 \pm 1.2 \text{ E-08}$	$1.0 \pm 1.1 \text{ E-08}$	$0.6 \pm 1.8 \text{ E-08}$
C-117M	184	$1.2 \pm 1.1 \text{ E-09}$	$0.5 \pm 1.0 \text{ E-09}$	$-0.4 \pm 1.1 \text{ E-09}$	$0 \pm 4 \text{ E-08}$	$-24 \pm 9 \text{ E-09}$	$-17 \pm 7 \text{ E-09}$	$0.8 \pm 1.6 \text{ E-08}$
C-118M	207	$0.7 \pm 1.2 \text{ E-09}$	$0.7 \pm 1.0 \text{ E-09}$	$1.0 \pm 1.2 \text{ E-09}$	$0 \pm 3 \text{ E-08}$	$0.6 \pm 1.0 \text{ E-08}$	$0.2 \pm 1.0 \text{ E-08}$	$5 \pm 9 \text{ E-09}$
C-119M	231	$1.0 \pm 1.3 \text{ E-09}$	$0.6 \pm 1.3 \text{ E-09}$	$-5 \pm 9 \text{ E-10}$	$1 \pm 3 \text{ E-08}$	$-4 \pm 7 \text{ E-09}$	$-4 \pm 8 \text{ E-08}$	$-6 \pm 7 \text{ E-09}$
C-120M	252	$1.0 \pm 0.9 \text{ E-09}$	$4 \pm 7 \text{ E-10}$	$-0.2 \pm 1.2 \text{ E-09}$	$-3 \pm 3 \text{ E-08}$	$1.2 \pm 1.5 \text{ E-08}$	$13 \pm 9 \text{ E-09}$	$-6 \pm 9 \text{ E-09}$
C-121B	265	$0 \pm 9 \text{ E-09}$	$1.6 \pm 1.4 \text{ E-09}$	$0 \pm 9 \text{ E-09}$	$2 \pm 2 \text{ E-08}$	--	--	--
C-121M	--	--	--	--	--	$-0.2 \pm 1.2 \text{ E-08}$	$13 \pm 9 \text{ E-09}$	$-2 \pm 8 \text{ E-09}$
<u>Auger Hole W10</u>								
C-15M	19	$2.0 \pm 1.8 \text{ E-09}$	$8 \pm 10 \text{ E-10}$	$-2 \pm 10 \text{ E-10}$	$2.4 \pm 1.6 \text{ E-08}$	$0 \pm 8 \text{ E-09}$	$15 \pm 8 \text{ E-09}$	$0.1 \pm 1.3 \text{ E-08}$
C-16M	40	$1.5 \pm 1.5 \text{ E-09}$	$-1.5 \pm 1.4 \text{ E-09}$	$0.0 \pm 1.3 \text{ E-09}$	$5 \pm 2 \text{ E-08}$	$0.1 \pm 1.8 \text{ E-08}$	$3.4 \pm 1.2 \text{ E-08}$	$-0.6 \pm 1.2 \text{ E-08}$
C-17M	61	$1.9 \pm 1.2 \text{ E-09}$	$-8 \pm 7 \text{ E-10}$	$-1 \pm 10 \text{ E-10}$	$1.9 \pm 1.6 \text{ E-08}$	$-2 \pm 9 \text{ E-09}$	$4 \pm 9 \text{ E-09}$	$0.5 \pm 1.4 \text{ E-08}$
C-18M	82	$1 \pm 2 \text{ E-09}$	$0.5 \pm 1.1 \text{ E-09}$	$-0.3 \pm 1.1 \text{ E-09}$	$2 \pm 3 \text{ E-08}$	$-0 \pm 2 \text{ E-08}$	$3.5 \pm 1.3 \text{ E-08}$	$-2.3 \pm 1.6 \text{ E-08}$
C-19M	103	$2.3 \pm 1.2 \text{ E-09}$	$-3 \pm 7 \text{ E-10}$	$-1.1 \pm 0.9 \text{ E-08}$	$4.1 \pm 1.6 \text{ E-08}$	$1 \pm 8 \text{ E-09}$	$-1 \pm 8 \text{ E-09}$	$-10 \pm 7 \text{ E-09}$
<u>Auger Hole W12</u>								
C-53M	19	$7 \pm 10 \text{ E-10}$	$9 \pm 9 \text{ E-10}$	$1.6 \pm 1.6 \text{ E-09}$	$5 \pm 2 \text{ E-08}$	$0.6 \pm 1.7 \text{ E-08}$	$1.8 \pm 1.1 \text{ E-08}$	$-2 \pm 5 \text{ E-08}$
C-54M	40	$1.3 \pm 0.7 \text{ E-09}$	$4.7 \pm 1.0 \text{ E-09*}$	$-1.3 \pm 1.1 \text{ E-09}$	$3 \pm 2 \text{ E-08}$	$-0.7 \pm 1.3 \text{ E-08}$	$8.6 \pm 1.2 \text{ E-08*}$	$0.2 \pm 1.2 \text{ E-08}$
<u>Auger Hole T12</u>								
C-55M	20	$0 \pm 9 \text{ E-09}$	$0 \pm 9 \text{ E-09}$	$8 \pm 2 \text{ E-09*}$	$2 \pm 2 \text{ E-08}$	$-0.3 \pm 1.8 \text{ E-08}$	$9.6 \pm 1.3 \text{ E-08*}$	$-0 \pm 1.3 \text{ E-08}$
C-56M	41	$2 \pm 2 \text{ E-09}$	$1 \pm 2 \text{ E-09}$	$-2 \pm 11 \text{ E-10}$	$1.1 \pm 0.2 \text{ E-07*}$	--	--	--
C-57M	56	$2.3 \pm 1.6 \text{ E-09}$	$5.5 \pm 1.6 \text{ E-09*}$	$3 \pm 14 \text{ E-10}$	$2 \pm 2 \text{ E-08}$	$-1.6 \pm 1.9 \text{ E-08}$	$-8 \pm 8 \text{ E-09}$	$-4 \pm 7 \text{ E-09}$
<u>Auger Hole W16</u>								
C-106M	18	$0 \pm 9 \text{ E-09}$	$2 \pm 6 \text{ E-10}$	$-4 \pm 9 \text{ E-10}$	$1.0 \pm 1.7 \text{ E-08}$	$-0.4 \pm 1.2 \text{ E-08}$	$1.5 \pm 1.0 \text{ E-08}$	$-0.4 \pm 1.0 \text{ E-08}$
C-107M	39	$1.5 \pm 1.2 \text{ E-09}$	$8 \pm 9 \text{ E-10}$	$10 \pm 12 \text{ E-11}$	$2 \pm 14 \text{ E-09}$	$-14 \pm 8 \text{ E-09}$	$15 \pm 9 \text{ E-09}$	$-3 \pm 8 \text{ E-09}$
C-108M	55	$5 \pm 2 \text{ E-09}$	$1.63 \pm 0.09 \text{ E-07*}$	$0 \pm 9 \text{ E-09}$	$4 \pm 2 \text{ E-08}$	$-70 \pm 6 \text{ E-09}$	$-29 \pm 4 \text{ E-09}$	$13 \pm 5 \text{ E-09}$

TABLE 18. (continued)

Sample	Depth (in.)	^{238}Pu ($\mu\text{Ci/g}$)	$^{239,240}\text{Pu}$ ($\mu\text{Ci/g}$)	^{241}Am ($\mu\text{Ci/g}$)	^{90}Sr ($\mu\text{Ci/g}$)	^{60}Co ($\mu\text{Ci/g}$)	^{137}Cs ($\mu\text{Ci/g}$)	^{154}Eu ($\mu\text{Ci/g}$)
Auger Hole W19								
C-60M	18	9 ± 10 E-10	-6 ± 8 E-10	5 ± 11 E-10	1.9 ± 0.4 E-07*	1.1 ± 1.3 E-08	5 ± 9 E-09	-13 ± 8 E-09
C-61M	39	0.6 ± 1.1 E-09	0.4 ± 1.2 E-09	-0.2 ± 1.5 E-09	2 ± 4 E-08	22 ± 5 E-08*	4 ± 3 E-08	-0 ± 3 E-08
C-62M	60	1.1 ± 1.2 E-09	1.1 ± 1.3 E-09	0.0 ± 1.0 E-09	-4 ± 3 E-08	-5 ± 7 E-09	-5 ± 7 E-09	-13 ± 7 E-09
C-63M	81	1.6 ± 1.4 E-09	8 ± 9 E-10	-0.4 ± 1.0 E-09	1 ± 3 E-08	2 ± 9 E-09	-14 ± 9 E-09	-4 ± 8 E-09
C-64M	102	8 ± 7 E-10	5 ± 6 E-10	-1.7 ± 0.8 E-09	2 ± 2 E-08	5 ± 9 E-09	13 ± 9 E-09	-0 ± 8 E-09
C-65M	123	1.3 ± 1.5 E-09	1.0 ± 1.1 E-09	-0.2 ± 1.2 E-09	4 ± 4 E-08	1 ± 2 E-08	1.5 ± 1.2 E-08	-1 ± 2 E-08
C-66M	144	0.8 ± 1.5 E-09	0.5 ± 1.0 E-09	-3 ± 9 E-10	-1 ± 3 E-08	1.4 ± 1.8 E-08	1.8 ± 1.1 E-08	0 ± 4 E-08
C-67M	165	1.6 ± 1.6 E-09	1.8 ± 1.7 E-09	-0.1 ± 1.1 E-09	1 ± 2 E-08	0.9 ± 1.8 E-08	2.1 ± 1.1 E-08	0 ± 8 E-09
C-68M	186	1.8 ± 1.2 E-09	1.3 ± 1.1 E-09	0.5 ± 1.1 E-09	-7 ± 4 E-08	-0.3 ± 1.9 E-08	2.3 ± 1.2 E-08	17 ± 9 E-09
C-69M	199	1.4 ± 1.6 E-09	5 ± 9 E-10	-2 ± 11 E-10	2 ± 2 E-08	-0.8 ± 1.7 E-08	2.1 ± 1.1 E-08	29 ± 9 E-09*
Auger Hole W20								
C-76M	19	1.8 ± 0.2 E-08*	1.47 ± 0.07 E-07*	7.2 ± 0.4 E-08*	1.9 ± 0.3 E-07*	15 ± 9 E-09	15.2 ± 1.3 E-08*	0.8 ± 1.0 E-08
C-77M	40	1.1 ± 1.4 E-09	4 ± 7 E-10	-0.5 ± 1.0 E-09	2 ± 3 E-08	-6 ± 9 E-09	-7 ± 9 E-09	-4 ± 3 E-09
C-78M	61	0.6 ± 1.1 E-09	0.4 ± 1.0 E-09	-0.3 ± 1.1 E-09	-2 ± 3 E-08	-1 ± 9 E-09	-4 ± 9 E-09	12 ± 8 E-09
C-79M	82	1.1 ± 1.5 E-09	-6 ± 9 E-10	-0 ± 9 E-09	3 ± 3 E-08	-0.8 ± 1.9 E-08	-19 ± 9 E-09	-8 ± 8 E-09
Auger Hole W22								
C-71M	19	9 ± 8 E-10	4 ± 8 E-10	-4 ± 11 E-10	3 ± 3 E-08	2 ± 2 E-08	1.4 ± 1.1 E-08	-0 ± 9 E-09
C-72M	40	0.5 ± 1.0 E-09	5 ± 7 E-10	-0.1 ± 1.0 E-09	3 ± 3 E-08	1.6 ± 1.9 E-08	2.7 ± 1.1 E-08	-1.3 ± 1.3 E-08
C-73M	61	1.0 ± 1.1 E-09	6 ± 9 E-10	0.0 ± 1.1 E-09	-1 ± 4 E-08	-1 ± 2 E-08	0.5 ± 1.2 E-08	-0.2 ± 1.6 E-08
C-74M	82	2.5 ± 1.3 E-09	5 ± 9 E-10	-0.2 ± 1.1 E-09	2 ± 4 E-08	2 ± 2 E-08	3.3 ± 1.4 E-08	-0.6 ± 1.9 E-08
C-75M	100	9 ± 9 E-10	-2 ± 8 E-10	9 ± 15 E-10	3 ± 2 E-08	0.7 ± 1.9 E-08	2.1 ± 1.2 E-08	8 ± 9 E-09
Auger Hole W23								
C-80B	18	4.2 ± 1.0 E-08*	1.10 ± 0.05 E-06*	8.0 ± 0.4 E-07*	2 ± 2 E-08	4.9 ± 1.0 E-08*	43 ± 2 E-08*	8 ± 8 E-09
C-81M	39	0.8 ± 1.2 E-09	0.5 ± 1.1 E-09	-0.3 ± 1.1 E-09	-1 ± 4 E-08	-42 ± 8 E-09	-31 ± 8 E-09	4 ± 8 E-09
C-82M	60	3.0 ± 1.6 E-09	8 ± 2 E-09*	-0.3 ± 1.2 E-09	-1 ± 3 E-08	-0.4 ± 1.0 E-08	-2 ± 9 E-09	-2 ± 8 E-09
C-83M	81	0.7 ± 1.0 E-09	-5 ± 7 E-10	-6 ± 9 E-10	-2 ± 4 E-08	-0.3 ± 1.1 E-08	-9 ± 7 E-09	-4 ± 6 E-09
C-84M	102	8 ± 9 E-10	4 ± 6 E-10	-0.1 ± 1.4 E-09	-1 ± 3 E-08	-0.2 ± 1.2 E-08	-9 ± 7 E-09	-3 ± 7 E-09
C-85M	123	3 ± 2 E-09	4 ± 14 E-10	6 ± 11 E-10	1 ± 2 E-08	-9 ± 7 E-09	1 ± 7 E-09	-3 ± 6 E-09
C-86M	144	2.0 ± 1.6 E-09	2.9 ± 1.7 E-09	-0.5 ± 1.0 E-09	1 ± 3 E-08	-11 ± 7 E-09	0.6 ± 1.0 E-08	-1.5 ± 1.0 E-08
C-87M	165	0.5 ± 1.0 E-09	5 ± 9 E-10	0.0 ± 1.2 E-09	4 ± 3 E-08	-1.8 ± 1.0 E-08	-0 ± 1.0 E-08	1 ± 9 E-09
C-88M	186	0.7 ± 1.2 E-09	0.5 ± 1.0 E-09	-6 ± 9 E-10	4 ± 4 E-08	-20 ± 9 E-09	-1.3 ± 1.0 E-08	-1 ± 8 E-09
C-89M	207	0.7 ± 1.2 E-09	9 ± 9 E-10	1.3 ± 0.2 E-08	2 ± 3 E-08	-04 ± 1.4 E-08	-12 ± 9 E-09	-5.4 ± 1.8 E-08
C-90M	228	1.7 ± 1.1 E-09	2 ± 8 E-10	-4 ± 9 E-10	1 ± 2 E-08	5 ± 8 E-09	-12 ± 8 E-09	8 ± 7 E-09

TABLE 18. (continued)

Sample	Depth (in.)	^{238}Pu ($\mu\text{Ci/g}$)	$^{239,240}\text{Pu}$ ($\mu\text{Ci/g}$)	^{241}Am ($\mu\text{Ci/g}$)	^{90}Sr ($\mu\text{Ci/g}$)	^{60}Co ($\mu\text{Ci/g}$)	^{137}Cs ($\mu\text{Ci/g}$)	^{154}Eu ($\mu\text{Ci/g}$)
<u>Auger Hole T23</u>								
C-91M	19	$6.6 \pm 1.3 \text{ E-08}^*$	$4.53 \pm 0.15 \text{ E-06}^*$	$7.5 \pm 0.2 \text{ E-06}^*$	$2.0 \pm 0.3 \text{ E-07}^*$	$-1 \pm 9 \text{ E-09}$	$31.2 \pm 1.8 \text{ E-08}^*$	$11 \pm 8 \text{ E-09}$
C-92M	40	$2.6 \pm 1.4 \text{ E-09}$	$2.4 \pm 0.3 \text{ E-08}^*$	$6.5 \pm 0.4 \text{ E-08}^*$	$0 \pm 3 \text{ E-08}$	$0.7 \pm 1.5 \text{ E-08}$	$3.0 \pm 1.2 \text{ E-08}$	$0.1 \pm 1.4 \text{ E-08}$
C-93M	61	$1.2 \pm 1.5 \text{ E-09}$	$0.8 \pm 1.4 \text{ E-09}$	$0.0 \pm 1.9 \text{ E-09}$	$3 \pm 3 \text{ E-08}$	$-3 \pm 6 \text{ E-08}$	$8 \pm 9 \text{ E-09}$	$-0.7 \pm 1.2 \text{ E-08}$
C-94M	82	$7 \pm 8 \text{ E-10}$	$5 \pm 8 \text{ E-10}$	$2 \pm 4 \text{ E-09}$	$2 \pm 3 \text{ E-08}$	$-3 \pm 4 \text{ E-08}$	$2 \pm 7 \text{ E-09}$	$12 \pm 9 \text{ E-09}$
C-96M	114	$2.34 \pm 0.12 \text{ E-07}^*$	$1.6 \pm 1.8 \text{ E-09}$	$4 \pm 10 \text{ E-10}$	$4 \pm 2 \text{ E-08}$	$-3 \pm 3 \text{ E-08}$	$-1 \pm 7 \text{ E-09}$	$-3 \pm 6 \text{ E-09}$
C-97M	135	$0.7 \pm 1.6 \text{ E-09}$	$0.9 \pm 1.4 \text{ E-09}$	$0.3 \pm 1.4 \text{ E-09}$	$3 \pm 3 \text{ E-08}$	$-2 \pm 4 \text{ E-08}$	$2 \pm 7 \text{ E-09}$	$-2 \pm 8 \text{ E-09}$
C-98M	156	$0.6 \pm 1.0 \text{ E-09}$	$4 \pm 7 \text{ E-10}$	$-0.4 \pm 1.1 \text{ E-09}$	$1 \pm 4 \text{ E-08}$	$-3 \pm 7 \text{ E-08}$	$-0.2 \pm 1.0 \text{ E-08}$	$-0.7 \pm 1.3 \text{ E-08}$
C-99M	177	$0.7 \pm 1.0 \text{ E-09}$	$5 \pm 8 \text{ E-10}$	$-0.3 \pm 1.3 \text{ E-09}$	$-4 \pm 3 \text{ E-08}$	$-6 \pm 6 \text{ E-08}$	$-5 \pm 9 \text{ E-09}$	$-11 \pm 9 \text{ E-09}$
C-100M	198	$0.7 \pm 1.0 \text{ E-09}$	$0.7 \pm 1.2 \text{ E-09}$	$0.6 \pm 1.2 \text{ E-09}$	$3 \pm 3 \text{ E-08}$	$-3 \pm 6 \text{ E-08}$	$-6 \pm 8 \text{ E-09}$	$10 \pm 8 \text{ E-09}$
C-101M	219	$0.5 \pm 1.4 \text{ E-09}$	$0.7 \pm 1.3 \text{ E-09}$	$5 \pm 9 \text{ E-10}$	$0 \pm 4 \text{ E-08}$	$-4 \pm 5 \text{ E-08}$	$9 \pm 8 \text{ E-09}$	$3 \pm 8 \text{ E-09}$
C-102M	234	$3 \pm 10 \text{ E-10}$	$6 \pm 10 \text{ E-10}$	$-1.7 \pm 1.0 \text{ E-09}$	$1 \pm 3 \text{ E-08}$	$-6 \pm 3 \text{ E-08}$	$-5 \pm 8 \text{ E-09}$	$-6 \pm 8 \text{ E-09}$
<u>Auger Hole C02</u>								
C-103M	17	$6 \pm 14 \text{ E-10}$	$3 \pm 11 \text{ E-10}$	$3 \pm 15 \text{ E-10}$	$2.0 \pm 1.8 \text{ E-08}$	$-4 \pm 5 \text{ E-08}$	$-7 \pm 9 \text{ E-09}$	$1 \pm 8 \text{ E-09}$
C-104M	38	$1.1 \pm 1.7 \text{ E-09}$	$0 \pm 9 \text{ E-09}$	$0 \pm 9 \text{ E-09}$	$1 \pm 2 \text{ E-08}$	$-0.2 \pm 1.6 \text{ E-08}$	$1.5 \pm 1.0 \text{ E-08}$	$-3 \pm 9 \text{ E-09}$
C-105M	57	$0 \pm 9 \text{ E-09}$	$1.4 \pm 1.5 \text{ E-09}$	$0 \pm 9 \text{ E-09}$	$6 \pm 2 \text{ E-08}$	$-4 \pm 4 \text{ E-08}$	$-12 \pm 9 \text{ E-09}$	$-8 \pm 8 \text{ E-09}$
<u>Auger Hole PA01</u>								
C-122M	19	$3.8 \pm 0.4 \text{ E-07}^*$	$8.4 \pm 0.2 \text{ E-06}^*$	$1.62 \pm 0.05 \text{ E-05}^*$	$1.9 \pm 0.3 \text{ E-07}^*$	$1.0 \pm 1.3 \text{ E-08}$	$23 \pm 1.7 \text{ E-08}^*$	$-7 \pm 9 \text{ E-09}$
C-123M	39	$1.1 \pm 1.2 \text{ E-09}$	$0.6 \pm 1.0 \text{ E-09}$	$-0.3 \pm 1.1 \text{ E-09}$	$4 \pm 3 \text{ E-08}$	$0.3 \pm 1.0 \text{ E-08}$	$11 \pm 9 \text{ E-09}$	$4 \pm 9 \text{ E-09}$
C-124M	60	$1.6 \pm 1.2 \text{ E-09}$	$1.3 \pm 1.0 \text{ E-09}$	$0.2 \pm 1.1 \text{ E-09}$	$1 \pm 3 \text{ E-08}$	$-3 \pm 3 \text{ E-08}$	$-8 \pm 7 \text{ E-09}$	$3 \pm 3 \text{ E-08}$
C-125M	81	$1.0 \pm 1.5 \text{ E-09}$	$2.1 \pm 1.7 \text{ E-09}$	$0 \pm 9 \text{ E-09}$	$-1 \pm 2 \text{ E-08}$	$0 \pm 2 \text{ E-08}$	$-1 \pm 6 \text{ E-09}$	$1.7 \pm 1.8 \text{ E-08}$
C-126M	102	$0.6 \pm 1.0 \text{ E-09}$	$4 \pm 9 \text{ E-10}$	$-0.1 \pm 1.1 \text{ E-09}$	$-1 \pm 3 \text{ E-08}$	$-3.6 \pm 1.1 \text{ E-08}$	$-1 \pm 5 \text{ E-09}$	$-13 \pm 6 \text{ E-09}$
C-127M	123	$4 \pm 7 \text{ E-10}$	$4 \pm 5 \text{ E-10}$	$-0.3 \pm 1.0 \text{ E-09}$	$0 \pm 3 \text{ E-08}$	$0 \pm 2 \text{ E-08}$	$1.0 \pm 1.1 \text{ E-08}$	$-0.4 \pm 1.0 \text{ E-08}$
C-128M	144	$0.8 \pm 1.2 \text{ E-09}$	$0.4 \pm 1.0 \text{ E-09}$	$-0.4 \pm 1.0 \text{ E-09}$	$4 \pm 3 \text{ E-08}$	$-0.7 \pm 1.0 \text{ E-08}$	$1.1 \pm 1.1 \text{ E-08}$	$-0.4 \pm 1.0 \text{ E-08}$
C-129M	168	$1.3 \pm 1.0 \text{ E-09}$	$1.1 \pm 0.8 \text{ E-09}$	$0 \pm 9 \text{ E-09}$	$3 \pm 3 \text{ E-08}$	$0.6 \pm 1.3 \text{ E-08}$	$0.2 \pm 1.0 \text{ E-08}$	$-12 \pm 9 \text{ E-09}$
<u>Auger Hole PA02</u>								
C-130M	20	$7.0 \pm 2.0 \text{ E-09}^*$	$1.03 \pm 0.06 \text{ E-07}^*$	$2.94 \pm 0.12 \text{ E-07}^*$	$5 \pm 3 \text{ E-08}$	$0.6 \pm 1.8 \text{ E-08}$	$6.1 \pm 1.1 \text{ E-08}^*$	$0.8 \pm 1.1 \text{ E-08}$
C-131M	54	$6.4 \pm 0.2 \text{ E-06}^*$	$3.34 \pm 0.06 \text{ E-05}^*$	$1.54 \pm 0.03 \text{ E-04}^*$	$1.28 \pm 0.04 \text{ E-06}^*$	$1.3 \pm 1.4 \text{ E-08}$	$18.7 \pm 1.5 \text{ E-08}^*$	$0 \pm 2 \text{ E-08}$
C-132M	75	$1.3 \pm 0.3 \text{ E-07}^*$	$8.2 \pm 0.7 \text{ E-07}^*$	$4.37 \pm 0.19 \text{ E-06}^*$	$6.7 \pm 0.3 \text{ E-07}^*$	--	--	--

*Sample result positive (i.e., greater than three sigma).

TABLE 19. RWMC SEDIMENT SAMPLE RADIOCHEMICAL ANALYSIS RESULTS: SAMPLES FROM THE
FY-1986 SHALLOW DRILLING PROGRAM

<u>Sample</u>	<u>Depth (in.)</u>	<u>^{238}Pu ($\mu\text{Ci/g}$)</u>	<u>$^{239},^{240}\text{Pu}$ ($\mu\text{Ci/g}$)</u>	<u>^{241}Am ($\mu\text{Ci/g}$)</u>	<u>^{90}Sr ($\mu\text{Ci/g}$)</u>	<u>^{137}Cs ($\mu\text{Ci/g}$)</u>
<u>Auger Hole W05</u>						
C224M	10	$2.1 \pm 1.2 \text{ E-09}$	$2.2 \pm 0.3 \text{ E-08}^*$	$6.0 \pm 0.5 \text{ E-08}^*$	$8 \pm 5 \text{ E-08}$	$1.88 \pm 0.13 \text{ E-07}^*$
C226M	50	$0.8 \pm 1.5 \text{ E-09}$	$0.8 \pm 1.2 \text{ E-09}$	$1 \pm 2 \text{ E-09}$	$4.6 \pm 1.9 \text{ E-08}$	$9 \pm 7 \text{ E-09}$
C227M	82	$0.7 \pm 1.1 \text{ E-09}$	$5 \pm 9 \text{ E-10}$	$-0.1 \pm 1.4 \text{ E-09}$	$4 \pm 4 \text{ E-08}$	$-1 \pm 7 \text{ E-09}$
C228M	102	$1 \pm 4 \text{ E-10}$	$-2 \pm 3 \text{ E-10}$	$0.2 \pm 1.0 \text{ E-09}$	$7 \pm 3 \text{ E-08}$	$1.3 \pm 0.9 \text{ E-08}$
C230M	139	$4 \pm 4 \text{ E-09}$	$2 \pm 4 \text{ E-09}$	$5 \pm 6 \text{ E-09}$	$1 \pm 3 \text{ E-08}$	$-2 \pm 8 \text{ E-09}$
C232M	182	$0.7 \pm 1.1 \text{ E-09}$	$4 \pm 8 \text{ E-10}$	$4 \pm 4 \text{ E-09}$	$5 \pm 7 \text{ E-08}$	$4 \pm 8 \text{ E-09}$
<u>Auger Hole W06</u>						
C233M	10	$0.8 \pm 1.2 \text{ E-09}$	$0.6 \pm 1.0 \text{ E-09}$	$1.3 \pm 0.2 \text{ E-08}^*$	$5 \pm 3 \text{ E-08}$	$1.13 \pm 0.12 \text{ E-07}^*$
C235M	62	$0.6 \pm 1.0 \text{ E-09}$	$6 \pm 9 \text{ E-10}$	$0.0 \pm 1.2 \text{ E-09}$	$3 \pm 4 \text{ E-08}$	$-4 \pm 7 \text{ E-09}$
C238M	122	$0.8 \pm 1.8 \text{ E-09}$	$0.8 \pm 1.7 \text{ E-09}$	$0.0 \pm 1.2 \text{ E-09}$	$6 \pm 4 \text{ E-08}$	$3 \pm 7 \text{ E-09}$
<u>Auger Hole W09</u>						
C284M	10	$1.1 \pm 0.2 \text{ E-08}^*$	$7.3 \pm 0.2 \text{ E-07}^*$	$2.28 \pm 0.06 \text{ E-06}^*$	$9 \pm 4 \text{ E-08}$	$2.9 \pm 0.9 \text{ E-08}^*$
C287M	94	$0.7 \pm 1.3 \text{ E-09}$	$1.1 \pm 1.0 \text{ E-09}$	$0 \pm 1 \text{ E-10}$	$5 \pm 2 \text{ E-08}$	$8 \pm 7 \text{ E-09}$
C291M	171	$4 \pm 9 \text{ E-10}$	$4 \pm 6 \text{ E-10}$	$0.0 \pm 1.2 \text{ E-09}$	$0 \pm 2 \text{ E-08}$	$-0 \pm 8 \text{ E-09}$
<u>Auger Hole W13</u>						
C258M	10	$0.5 \pm 1.5 \text{ E-09}$	$0.8 \pm 1.4 \text{ E-09}$	$1 \pm 2 \text{ E-09}$	$5 \pm 3 \text{ E-08}$	$1.09 \pm 0.12 \text{ E-07}^*$
C260M	50	$1.0 \pm 1.3 \text{ E-09}$	$1.0 \pm 1.0 \text{ E-09}$	$2.8 \pm 0.3 \text{ E-08}^*$	$2.0 \pm 0.4 \text{ E-07}^*$	$1.0 \pm 0.9 \text{ E-08}$
C261M	82	$1.9 \pm 1.1 \text{ E-09}$	$2.3 \pm 0.3 \text{ E-08}^*$	$5.5 \pm 0.4 \text{ E-08}^*$	$5 \pm 2 \text{ E-08}$	$5.8 \pm 1.1 \text{ E-08}^*$
C265M	162	$0.8 \pm 1.2 \text{ E-09}$	$5 \pm 8 \text{ E-10}$	$0.5 \pm 1.3 \text{ E-09}$	$2 \pm 3 \text{ E-08}$	$0 \pm 8 \text{ E-09}$
C267M	202	$0.8 \pm 1.4 \text{ E-09}$	$8 \pm 9 \text{ E-10}$	$0.0 \pm 1.5 \text{ E-09}$	$2 \pm 3 \text{ E-08}$	$1.2 \pm 1.0 \text{ E-08}$
<u>Auger Hole W17</u>						
C272M	10	$4 \pm 7 \text{ E-10}$	$4 \pm 6 \text{ E-10}$	$-0.2 \pm 1.2 \text{ E-09}$	$5 \pm 4 \text{ E-08}$	$1.4 \pm 0.8 \text{ E-08}$
C277M	122	$6 \pm 8 \text{ E-10}$	$4 \pm 6 \text{ E-10}$	$0.6 \pm 1.2 \text{ E-09}$	$6 \pm 7 \text{ E-08}$	$1.6 \pm 0.8 \text{ E-09}$
C283M	239	$6 \pm 8 \text{ E-10}$	$4 \pm 7 \text{ E-10}$	$0.0 \pm 1.1 \text{ E-09}$	$6 \pm 4 \text{ E-08}$	$-1 \pm 8 \text{ E-09}$
<u>Auger Hole W18</u>						
C248M	10	$0.6 \pm 1.2 \text{ E-09}$	$0.6 \pm 1.1 \text{ E-09}$	$-0.2 \pm 1.4 \text{ E-09}$	$5 \pm 3 \text{ E-08}$	$6 \pm 7 \text{ E-09}$
C252M	102	$8 \pm 9 \text{ E-10}$	$3 \pm 9 \text{ E-10}$	$1.5 \pm 1.8 \text{ E-09}$	$2 \pm 4 \text{ E-08}$	$1.6 \pm 0.8 \text{ E-09}$
C257M	194	$0.5 \pm 1.3 \text{ E-09}$	$0.8 \pm 1.0 \text{ E-09}$	$0.7 \pm 1.2 \text{ E-09}$	$1 \pm 3 \text{ E-08}$	$1 \pm 8 \text{ E-09}$

TABLE 19. (continued)

<u>Sample</u>	<u>Depth (in.)</u>	<u>^{238}Pu ($\mu\text{Ci/g}$)</u>	<u>$^{239,240}\text{Pu}$ ($\mu\text{Ci/g}$)</u>	<u>^{241}Am ($\mu\text{Ci/g}$)</u>	<u>^{90}Sr ($\mu\text{Ci/g}$)</u>	<u>^{137}Cs ($\mu\text{Ci/g}$)</u>
<u>Auger Hole W24</u>						
C209M	19	5 ± 9 E-10	5 ± 7 E-10	-0.4 ± 1.1 E-09	5 ± 4 E-08	2.7 ± 0.8 E-08*
C211M	59	1.0 ± 1.1 E-09	5 ± 8 E-10	0 ± 2 E-09	-1 ± 4 E-08	3.3 ± 1.2 E-08
C213M	113	1.0 ± 1.3 E-09	2 ± 8 E-10	0.1 ± 1.1 E-09	0 ± 2 E-08	0.9 ± 1.0 E-08
<u>Auger Hole W25</u>						
C243M	90	7 ± 8 E-10	-5 ± 7 E-10	-0.3 ± 1.2 E-09	1 ± 4 E-08	1.5 ± 0.7 E-08
C246M	162	0.4 ± 1.2 E-09	0.4 ± 1.1 E-09	0.6 ± 1.2 E-09	6 ± 6 E-08	7 ± 9 E-09
C247M	179	0.7 ± 1.2 E-09	0.7 ± 1.0 E-09	0 ± 2 E-09	3 ± 2 E-08	1 ± 8 E-09

*Sample result positive (i.e., greater than three sigma).

4. Inorganic Water Concentration Data

4.1 Environmental Restoration Data Base Aquifer Concentrations

The following table presents results of Environmental Restoration aquifer water sampling for inorganics. Samples for cadmium, chloride, lead, magnesium, mercury, and nitrate are included. Aquifer monitoring wells drilled around the RWMC in addition to the USGS monitoring wells are included in this data base. These are generally referred to as the "M" wells. The monitoring results are contained in the Environmental Restoration Information System (ERIS) database and were queried by Mack Galusha. The data are all validated to at least level C.

The data qualifiers for inorganic analysis are apparently more complicated than for radioactive analysis. For a complete understanding of each sample result, the Limitations and Validation (L&V) Report that accompanied the sample results must be read. Only the flags from the L&V report are included into the ERIS data base. A brief overview is attempted herein. In general, there are three qualifiers: C, Q, and M. The C qualifier relates to concentrations. A "B" is entered if the reported value was less than the Contract Required Detection Limit but greater than or the Instrument Detection Limit. If the analyte was analyzed for but not detected, a "U" is entered. The Q qualifier has the following possible entries:

- E: reported value is estimated because of interference, explanatory note included
- M: duplicate injection precision not met
- N: piked sample recovery not within control limits
- S: value determined by the Method of Standard Additions (MSA)
- W: analysis is out of control limits
- *: duplicate analysis not within control limits
- +: correlation coefficient for the MSA is less than 0.995.
- R: recommend rejection because sample analysis was out of control limits.

The M qualifier has to do with the method of analysis and will not be discussed further here. The results of the ERIS data base query are arranged by analyte chronologically by well location.

Table 7: ERIS Water Sample Inorganic Concentrations

Well	Date	Analyte	Conc.	Units	Q Flags
M10S	21-OCT-92	Cadmium	5	ug/L	U P
M10S	26-FEB-93	Cadmium	5	ug/L	U P
M10S	13-MAY-93	Cadmium	5	ug/L	U P
M10S	28-JUL-93	Cadmium	9	ug/L	U P
M10S	28-JUL-93	Cadmium	6	ug/L	U P
M10S	04-NOV-93	Cadmium	9.2	ug/L	P
M10S	04-NOV-93	Cadmium	6.1	ug/L	P

Table 7: ERIS Water Sample Inorganic Concentrations

Well	Date	Analyte	Conc.	Units	Q Flags
M10S	17-JAN-94	Cadmium	7.5	ug/L	* P
M10S	17-JAN-94	Cadmium	7.1	ug/L	* P
M10S	18-APR-94	Cadmium	2	ug/L	U P
M10S	18-APR-94	Cadmium	2.2	ug/L	B* P
M10S	20-JUN-94	Cadmium	6.1	ug/L	P
M10S	20-JUN-94	Cadmium	4.5	ug/L	B* P
M10S	02-NOV-94	Cadmium	.4	ug/L	U P
M10S	12-JAN-95	Cadmium	2	ug/L	U P
M1S	19-OCT-92	Cadmium	5	ug/L	U P
M1S	25-FEB-93	Cadmium	10	ug/L	P
M1S	12-MAY-93	Cadmium	7.5	ug/L	U P
M1S	27-JUL-93	Cadmium	8	ug/L	U P
M1S	04-NOV-93	Cadmium	5.1	ug/L	P
M1S	04-NOV-93	Cadmium	6.6	ug/L	P
M1S	17-JAN-94	Cadmium	8.3	ug/L	* P
M1S	17-JAN-94	Cadmium	12.1	ug/L	* P
M1S	19-APR-94	Cadmium	2	ug/L	U P
M1S	19-APR-94	Cadmium	11.3	ug/L	* P
M1S	20-JUN-94	Cadmium	10.1	ug/L	P
M1S	20-JUN-94	Cadmium	14.7	ug/L	* P
M1S	02-NOV-94	Cadmium	.4	ug/L	U P
M1S	11-JAN-95	Cadmium	2	ug/L	U P
M3S	20-OCT-92	Cadmium	5	ug/L	U P
M3S	26-FEB-93	Cadmium	6	ug/L	P
M3S	26-FEB-93	Cadmium	5	ug/L	U P
M3S	12-MAY-93	Cadmium	7.1	ug/L	U P
M3S	28-JUL-93	Cadmium	5	ug/L	U P

Table 7: ERIS Water Sample Inorganic Concentrations

Well	Date	Analyte	Conc.	Units	Q Flags
M3S	28-JUL-93	Cadmium	5	ug/L	U P
M3S	05-NOV-93	Cadmium	5.6	ug/L	P
M3S	05-NOV-93	Cadmium	5	ug/L	U P
M3S	18-JAN-94	Cadmium	9.9	ug/L	* P
M3S	18-JAN-94	Cadmium	10.2	ug/L	* P
M3S	18-APR-94	Cadmium	2	ug/L	U P
M3S	18-APR-94	Cadmium	6.4	ug/L	* P
M3S	21-JUN-94	Cadmium	9.3	ug/L	P
M3S	21-JUN-94	Cadmium	9.2	ug/L	* P
M3S	02-NOV-94	Cadmium	.4	ug/L	U P
M3S	12-JAN-95	Cadmium	2	ug/L	U P
M4D	21-OCT-92	Cadmium	5	ug/L	U P
M4D	04-MAR-93	Cadmium	26	ug/L	P
M4D	13-MAY-93	Cadmium	20.6	ug/L	U P
M4D	27-JUL-93	Cadmium	7	ug/L	U P
M4D	27-JUL-93	Cadmium	5	ug/L	U P
M4D	04-NOV-93	Cadmium	5.8	ug/L	P
M4D	04-NOV-93	Cadmium	6.5	ug/L	P
M4D	04-NOV-93	Cadmium	8.2	ug/L	P
M4D	04-NOV-93	Cadmium	5	ug/L	U P
M4D	18-JAN-94	Cadmium	6.2	ug/L	* P
M4D	18-JAN-94	Cadmium	6	ug/L	* P
M4D	18-JAN-94	Cadmium	3.4	ug/L	B* P
M4D	18-JAN-94	Cadmium	3.6	ug/L	B* P
M4D	19-APR-94	Cadmium	2	ug/L	U P
M4D	19-APR-94	Cadmium	2	ug/L	U P
M4D	19-APR-94	Cadmium	11.5	ug/L	* P

Table 7: ERIS Water Sample Inorganic Concentrations

Well	Date	Analyte	Conc.	Units	Q Flags
M4D	19-APR-94	Cadmium	3.6	ug/L	B* P
M4D	20-JUN-94	Cadmium	6.2	ug/L	P
M4D	20-JUN-94	Cadmium	6.5	ug/L	* P
M4D	20-JUN-94	Cadmium	7.6	ug/L	P
M4D	20-JUN-94	Cadmium	11.6	ug/L	* P
M4D	02-NOV-94	Cadmium	.4	ug/L	U P
M4D	02-NOV-94	Cadmium	.4	ug/L	U P
M4D	11-JAN-95	Cadmium	2	ug/L	U P
M4D	11-JAN-95	Cadmium	2	ug/L	U P
M6S	21-OCT-92	Cadmium	5	ug/L	U P
M6S	04-MAR-93	Cadmium	7	ug/L	P
M6S	13-MAY-93	Cadmium	5	ug/L	U P
M6S	13-MAY-93	Cadmium	5	ug/L	U P
M6S	28-JUL-93	Cadmium	8	ug/L	U P
M6S	28-JUL-93	Cadmium	7	ug/L	U P
M6S	28-JUL-93	Cadmium	5	ug/L	U P
M6S	28-JUL-93	Cadmium	6	ug/L	U P
M6S	05-NOV-93	Cadmium	6.7	ug/L	P
M6S	05-NOV-93	Cadmium	5	ug/L	U P
M6S	18-JAN-94	Cadmium	8.1	ug/L	* P
M6S	18-JAN-94	Cadmium	6.6	ug/L	* P
M6S	18-APR-94	Cadmium	2	ug/L	U P
M6S	18-APR-94	Cadmium	2	ug/L	B* P
M6S	20-JUN-94	Cadmium	2	ug/L	U P
M6S	20-JUN-94	Cadmium	14.9	ug/L	* P
M6S	02-NOV-94	Cadmium	.4	ug/L	U P
M6S	11-JAN-95	Cadmium	2	ug/L	U P

Table 7: ERIS Water Sample Inorganic Concentrations

Well	Date	Analyte	Conc.	Units	Q Flags
M7S	20-OCT-92	Cadmium	5	ug/L	U P
M7S	04-MAR-93	Cadmium	6	ug/L	P
M7S	04-MAR-93	Cadmium	7	ug/L	P
M7S	13-MAY-93	Cadmium	5	ug/L	UJ P
M7S	13-MAY-93	Cadmium	12.1	ug/L	UJ P
M7S	27-JUL-93	Cadmium	12	ug/L	U P
M7S	27-JUL-93	Cadmium	6	ug/L	U P
M7S	09-NOV-93	Cadmium	5	ug/L	U P
M7S	09-NOV-93	Cadmium	5	ug/L	U P
M7S	18-JAN-94	Cadmium	3.4	ug/L	B* P
M7S	18-JAN-94	Cadmium	4.5	ug/L	B* P
M7S	18-APR-94	Cadmium	2	ug/L	U P
M7S	18-APR-94	Cadmium	2	ug/L	U* P
M7S	21-JUN-94	Cadmium	4	ug/L	B P
M7S	21-JUN-94	Cadmium	10.5	ug/L	* P
M7S	02-NOV-94	Cadmium	.4	ug/L	U P
M7S	12-JAN-95	Cadmium	2	ug/L	U P
M10S	21-OCT-92	Lead	39.1	ug/L	S F
M10S	26-FEB-93	Lead	2.2	ug/L	B F
M10S	13-MAY-93	Lead	17.3	ug/L	F
M10S	28-JUL-93	Lead	1.6	ug/L	BWU F
M10S	28-JUL-93	Lead	4	ug/L	NUJ
M10S	04-NOV-93	Lead	1	ug/L	UNW F
M10S	04-NOV-93	Lead	1.3	ug/L	BNW* F
M10S	17-JAN-94	Lead	2	ug/L	U F
M10S	17-JAN-94	Lead	2.5	ug/L	B F
M10S	18-APR-94	Lead	1	ug/L	U F

Table 7: ERIS Water Sample Inorganic Concentrations

Well	Date	Analyte	Conc.	Units	Q Flags
M10S	18-APR-94	Lead	2.8	ug/L	B F
M10S	20-JUN-94	Lead	3	ug/L	U P
M10S	20-JUN-94	Lead	3	ug/L	U P
M10S	02-NOV-94	Lead	1.7	ug/L	U P
M10S	12-JAN-95	Lead	1.4	ug/L	B F
M1S	19-OCT-92	Lead	1.6	ug/L	B F
M1S	25-FEB-93	Lead	2.7	ug/L	BWF
M1S	12-MAY-93	Lead	1	ug/L	UF
M1S	27-JUL-93	Lead	5.4	ug/L	WNUJF
M1S	04-NOV-93	Lead	1	ug/L	UNWF
M1S	04-NOV-93	Lead	46.1	ug/L	N* F
M1S	17-JAN-94	Lead	2	ug/L	UF
M1S	17-JAN-94	Lead	2	ug/L	UF
M1S	19-APR-94	Lead	1	ug/L	UF
M1S	19-APR-94	Lead	1	ug/L	UF
M1S	20-JUN-94	Lead	3	ug/L	UP
M1S	20-JUN-94	Lead	3	ug/L	UP
M1S	02-NOV-94	Lead	1.7	ug/L	UP
M1S	11-JAN-95	Lead	1.8	ug/L	B F
M3S	20-OCT-92	Lead	1	ug/L	UWF
M3S	26-FEB-93	Lead	1.7	ug/L	B F
M3S	26-FEB-93	Lead	1.9	ug/L	B F
M3S	12-MAY-93	Lead	2.2	ug/L	BUF
M3S	28-JUL-93	Lead	1	ug/L	UF
M3S	28-JUL-93	Lead	1	ug/L	NUJF
M3S	05-NOV-93	Lead	1	ug/L	UNWF
M3S	05-NOV-93	Lead	4.1	ug/L	NW* F

Table 7: ERIS Water Sample Inorganic Concentrations

Well	Date	Analyte	Conc.	Units	Q Flags
M3S	18-JAN-94	Lead	2	ug/L	U F
M3S	18-JAN-94	Lead	2	ug/L	UW F
M3S	18-APR-94	Lead	1	ug/L	UW F
M3S	18-APR-94	Lead	1.7	ug/L	B F
M3S	21-JUN-94	Lead	3	ug/L	U P
M3S	21-JUN-94	Lead	74	ug/L	P
M3S	02-NOV-94	Lead	1.7	ug/L	U P
M3S	12-JAN-95	Lead	1	ug/L	U F
M4D	21-OCT-92	Lead	4.9	ug/L	F
M4D	04-MAR-93	Lead	9.7	ug/L	F
M4D	13-MAY-93	Lead	9.6	ug/L	F
M4D	27-JUL-93	Lead	1	ug/L	UW F
M4D	27-JUL-93	Lead	9.8	ug/L	NJ F
M4D	04-NOV-93	Lead	1	ug/L	UNW F
M4D	04-NOV-93	Lead	16.3	ug/L	N* F
M4D	04-NOV-93	Lead	1	ug/L	UNW F
M4D	04-NOV-93	Lead	13	ug/L	NS* F
M4D	18-JAN-94	Lead	2	ug/L	UW F
M4D	18-JAN-94	Lead	2	ug/L	U F
M4D	18-JAN-94	Lead	2	ug/L	UF
M4D	18-JAN-94	Lead	2	ug/L	UW F
M4D	19-APR-94	Lead	1	ug/L	UW F
M4D	19-APR-94	Lead	1	ug/L	UW F
M4D	19-APR-94	Lead	1.5	ug/L	B F
M4D	19-APR-94	Lead	1.4	ug/L	B F
M4D	20-JUN-94	Lead	3	ug/L	U P
M4D	20-JUN-94	Lead	3	ug/L	U P

Table 7: ERIS Water Sample Inorganic Concentrations

Well	Date	Analyte	Conc.	Units	Q Flags
M4D	20-JUN-94	Lead	3	ug/L	U P
M4D	20-JUN-94	Lead	3	ug/L	U P
M4D	02-NOV-94	Lead	6.4	ug/L	P
M4D	02-NOV-94	Lead	1.7	ug/L	U P
M4D	11-JAN-95	Lead	1	ug/L	B F
M4D	11-JAN-95	Lead	1.4	ug/L	B F
M6S	21-OCT-92	Lead	1.4	ug/L	B F
M6S	04-MAR-93	Lead	1	ug/L	WUJ F
M6S	13-MAY-93	Lead	4.5	ug/L	U F
M6S	13-MAY-93	Lead	5.3	ug/L	U F
M6S	28-JUL-93	Lead	1	ug/L	WUJ F
M6S	28-JUL-93	Lead	1	ug/L	WUJ F
M6S	28-JUL-93	Lead	1	ug/L	WNuj F
M6S	28-JUL-93	Lead	1.8	ug/L	BNWuj F
M6S	05-NOV-93	Lead	1	ug/L	UN F
M6S	05-NOV-93	Lead	1.2	ug/	BNW* F
M6S	18-JAN-94	Lead	2	ug/L	U F
M6S	18-JAN-94	Lead	2	ug/L	U F
M6S	18-APR-94	Lead	1	ug/L	U F
M6S	18-APR-94	Lead	1.2	ug/L	B F
M6S	20-JUN-94	Lead	3	ug/L	U P
M6S	20-JUN-94	Lead	3	ug/L	U P
M6S	02-NOV-94	Lead	1.7	ug/L	U P
M6S	11-JAN-95	Lead	1	ug/L	UWF
M7S	20-OCT-92	Lead	1	ug/L	U F
M7S	04-MAR-93	Lead	1	ug/L	WUJ F
M7S	04-MAR-93	Lead	1	ug/L	WUJ F

Table 7: ERIS Water Sample Inorganic Concentrations

Well	Date	Analyte	Conc.	Units	Q Flags
M7S	13-MAY-93	Lead	1	ug/L	U F
M7S	13-MAY-93	Lead	1	ug/L	U F
M7S	27-JUL-93	Lead	1	ug/L	NUJ F
M7S	27-JUL-93	Lead	1	ug/L	NUJ F
M7S	09-NOV-93	Lead	1	ug/L	UNW F
M7S	09-NOV-93	Lead	1	ug/L	UNW* F
M7S	18-JAN-94	Lead	2	ug/L	U F
M7S	18-JAN-94	Lead	2	ug/L	U F
M7S	18-APR-94	Lead	1	ug/L	UW F
M7S	18-APR-94	Lead	1.2	ug/L	B F
M7S	21-JUN-94	Lead	3	ug/L	U P
M7S	21-JUN-94	Lead	3	ug/L	U P
M7S	02-NOV-94	Lead	1.7	ug/L	U P
M7S	12-JAN-95	Lead	1	ug/L	UW F
M10S	21-OCT-92	Magnesium	12400	ug/L	P
M10S	26-FEB-93	Magnesium	14600	ug/L	P
M10S	13-MAY-93	Magnesium	13900	ug/L	P
M10S	28-JUL-93	Magnesium	13500	ug/L	P
M10S	28-JUL-93	Magnesium	14700	ug/L	P
M10S	04-NOV-93	Magnesium	13300	ug/L	P
M10S	04-NOV-93	Magnesium	14200	ug/L	P
M10S	18-APR-94	Magnesium	13300	ug/L	P
M10S	18-APR-94	Magnesium	14100	ug/L	P
M10S	02-NOV-94	Magnesium	14200	ug/L	P
M10S	12-JAN-95	Magnesium	14700	ug/L	P
M1S	19-OCT-92	Magnesium	12700	ug/L	P
M1S	25-FEB-93	Magnesium	11700	ug/L	P

Table 7: ERIS Water Sample Inorganic Concentrations

Well	Date	Analyte	Conc.	Units	Q Flags
M1S	12-MAY-93	Magnesium	12300	ug/L	P
M1S	27-JUL-93	Magnesium	13100	ug/L	P
M1S	04-NOV-93	Magnesium	11500	ug/L	P
M1S	04-NOV-93	Magnesium	12100	ug/L	P
M1S	19-APR-94	Magnesium	12400	ug/L	P
M1S	19-APR-94	Magnesium	11600	ug/L	P
M1S	02-NOV-94	Magnesium	12700	ug/L	P
M1S	11-JAN-95	Magnesium	12400	ug/L	P
M3S	20-OCT-92	Magnesium	16700	ug/L	P
M3S	26-FEB-93	Magnesium	16200	ug/L	P
M3S	26-FEB-93	Magnesium	15600	ug/L	P
M3S	12-MAY-93	Magnesium	14900	ug/L	P
M3S	28-JUL-93	Magnesium	14700	ug/L	P
M3S	28-JUL-93	Magnesium	14700	ug/L	P
M3S	05-NOV-93	Magnesium	15200	ug/L	P
M3S	05-NOV-93	Magnesium	14600	ug/L	P
M3S	18-APR-94	Magnesium	15300	ug/L	P
M3S	18-APR-94	Magnesium	15700	ug/L	P
M3S	02-NOV-94	Magnesium	15000	ug/L	P
M3S	12-JAN-95	Magnesium	15500	ug/L	P
M4D	21-OCT-92	Magnesium	2600	ug/L	B P
M4D	04-MAR-93	Magnesium	10400	ug/L	P
M4D	13-MAY-93	Magnesium	6620	ug/L	P
M4D	27-JUL-93	Magnesium	2540	ug/L	B P
M4D	27-JUL-93	Magnesium	11100	ug/L	P
M4D	04-NOV-93	Magnesium	2460	ug/L	B P
M4D	04-NOV-93	Magnesium	2580	ug/L	B P

Table 7: ERIS Water Sample Inorganic Concentrations

Well	Date	Analyte	Conc.	Units	Q Flags
M4D	04-NOV-93	Magnesium	18200	ug/L	P
M4D	04-NOV-93	Magnesium	18800	ug/L	P
M4D	19-APR-94	Magnesium	1840	ug/L	B P
M4D	19-APR-94	Magnesium	2430	ug/L	B P
M4D	19-APR-94	Magnesium	1710	ug/L	B P
M4D	19-APR-94	Magnesium	2520	ug/L	B P
M4D	02-NOV-94	Magnesium	18600	ug/L	P
M4D	02-NOV-94	Magnesium	6420	ug/L	P
M4D	11-JAN-95	Magnesium	2970	ug/L	B P
M4D	11-JAN-95	Magnesium	2890	ug/L	B P
M6S	21-OCT-92	Magnesium	21200	ug/L	P
M6S	04-MAR-93	Magnesium	19800	ug/L	P
M6S	13-MAY-93	Magnesium	21800	ug/L	P
M6S	13-MAY-93	Magnesium	21900	ug/L	P
M6S	28-JUL-93	Magnesium	21600	ug/L	P
M6S	28-JUL-93	Magnesium	19100	ug/L	P
M6S	28-JUL-93	Magnesium	20400	ug/L	P
M6S	28-JUL-93	Magnesium	20900	ug/L	P
M6S	05-NOV-93	Magnesium	19200	ug/L	P
M6S	05-NOV-93	Magnesium	19000	ug/L	P
M6S	18-APR-94	Magnesium	19700	ug/L	P
M6S	18-APR-94	Magnesium	18700	ug/L	P
M6S	02-NOV-94	Magnesium	21200	ug/L	P
M6S	11-JAN-95	Magnesium	20500	ug/L	P
M7S	20-OCT-92	Magnesium	13600	ug/L	P
M7S	04-MAR-93	Magnesium	13000	ug/L	P
M7S	04-MAR-93	Magnesium	13200	ug/L	P

Table 7: ERIS Water Sample Inorganic Concentrations

Well	Date	Analyte	Conc.	Units	Q Flags
M7S	13-MAY-93	Magnesium	14800	ug/L	P
M7S	13-MAY-93	Magnesium	14300	ug/L	P
M7S	27-JUL-93	Magnesium	13600	ug/L	P
M7S	27-JUL-93	Magnesium	13500	ug/L	P
M7S	09-NOV-93	Magnesium	14200	ug/L	P
M7S	09-NOV-93	Magnesium	13800	ug/L	P
M7S	18-APR-94	Magnesium	14000	ug/L	P
M7S	18-APR-94	Magnesium	13700	ug/L	P
M7S	02-NOV-94	Magnesium	14100	ug/L	P
M7S	12-JAN-95	Magnesium	15100	ug/L	P
M10S	21-OCT-92	Mercury	.1	ug/L	U CV
M10S	26-FEB-93	Mercury	.1	ug/L	U CV
M10S	13-MAY-93	Mercury	.1	ug/L	NUJ CV
M10S	28-JUL-93	Mercury	.12	ug/L	BU CV
M10S	28-JUL-93	Mercury	.14	ug/L	BU CV
M10S	04-NOV-93	Mercury	.1	ug/L	U CV
M10S	04-NOV-93	Mercury	.1	ug/L	U CV
M10S	17-JAN-94	Mercury	.1	ug/L	U CV
M10S	17-JAN-94	Mercury	.1	ug/L	U CV
M10S	18-APR-94	Mercury	.1	ug/L	U CV
M10S	18-APR-94	Mercury	.1	ug/L	U CV
M10S	20-JUN-94	Mercury	1.1	ug/L	CV
M10S	20-JUN-94	Mercury	.16	ug/L	B CV
M10S	02-NOV-94	Mercury	.1	ug/L	U CV
M10S	12-JAN-95	Mercury	.1	ug/L	U CV
M1S	19-OCT-92	Mercury	.1	ug/L	U CV
M1S	25-FEB-93	Mercury	.1	ug/L	U CV

Table 7: ERIS Water Sample Inorganic Concentrations

Well	Date	Analyte	Conc.	Units	Q Flags
M1S	12-MAY-93	Mercury	.1	ug/L	BNUJ CV
M1S	27-JUL-93	Mercury	.1	ug/L	U CV
M1S	04-NOV-93	Mercury	.1	ug/L	U CV
M1S	04-NOV-93	Mercury	.16	ug/L	B CV
M1S	17-JAN-94	Mercury	.14	ug/L	B CV
M1S	17-JAN-94	Mercury	.1	ug/L	U CV
M1S	19-APR-94	Mercury	.1	ug/L	U CV
M1S	19-APR-94	Mercury	.1	ug/L	U CV
M1S	20-JUN-94	Mercury	.1	ug/L	U CV
M1S	20-JUN-94	Mercury	.1	ug/L	U CV
M1S	02-NOV-94	Mercury	.1	ug/L	U CV
M1S	11-JAN-95	Mercury	.11	ug/L	B CV
M3S	20-OCT-92	Mercury	.1	ug/L	U CV
M3S	26-FEB-93	Mercury	.1	ug/L	U CV
M3S	26-FEB-93	Mercury	.1	ug/L	U CV
M3S	12-MAY-93	Mercury	.1	ug/L	NUJ CV
M3S	28-JUL-93	Mercury	.26	ug/L	U CV
M3S	28-JUL-93	Mercury	.25	ug/L	U CV
M3S	05-NOV-93	Mercury	.13	ug/L	B CV
M3S	05-NOV-93	Mercury	.1	ug/L	U CV
M3S	18-JAN-94	Mercury	.1	ug/L	U CV
M3S	18-JAN-94	Mercury	.1	ug/L	U CV
M3S	18-APR-94	Mercury	.1	ug/L	U CV
M3S	18-APR-94	Mercury	.1	ug/L	U CV
M3S	21-JUN-94	Mercury	.1	ug/L	U CV
M3S	21-JUN-94	Mercury	.1	ug/L	B CV
M3S	02-NOV-94	Mercury	.1	ug/L	U CV

Table 7: ERIS Water Sample Inorganic Concentrations

Well	Date	Analyte	Conc.	Units	Q Flags
M3S	12-JAN-95	Mercury	.11	ug/L	B CV
M4D	21-OCT-92	Mercury	.1	ug/L	U CV
M4D	04-MAR-93	Mercury	.1	ug/L	U CV
M4D	13-MAY-93	Mercury	.1	ug/L	NUJ CV
M4D	27-JUL-93	Mercury	.18	ug/L	BU CV
M4D	27-JUL-93	Mercury	.17	ug/L	BU CV
M4D	04-NOV-93	Mercury	.1	ug/L	U CV
M4D	04-NOV-93	Mercury	.1	ug/L	U CV
M4D	04-NOV-93	Mercury	.1	ug/L	U CV
M4D	04-NOV-93	Mercury	.1	ug/L	U CV
M4D	18-JAN-94	Mercury	.1	ug/L	U CV
M4D	18-JAN-94	Mercury	.1	ug/L	U CV
M4D	18-JAN-94	Mercury	.1	ug/L	U CV
M4D	18-JAN-94	Mercury	.1	ug/L	U CV
M4D	19-APR-94	Mercury	.1	ug/L	U CV
M4D	19-APR-94	Mercury	.1	ug/L	U CV
M4D	19-APR-94	Mercury	.1	ug/L	U CV
M4D	20-JUN-94	Mercury	.1	ug/L	U CV
M4D	20-JUN-94	Mercury	.1	ug/L	U CV
M4D	20-JUN-94	Mercury	.1	ug/L	U CV
M4D	02-NOV-94	Mercury	.1	ug/L	U CV
M4D	02-NOV-94	Mercury	.1	ug/L	U CV
M4D	11-JAN-95	Mercury	.1	ug/L	U CV
M4D	11-JAN-95	Mercury	.1	ug/L	U CV
M6S	21-OCT-92	Mercury	.1	ug/L	U CV
M6S	04-MAR-93	Mercury	.1	ug/L	U CV

Table 7: ERIS Water Sample Inorganic Concentrations

Well	Date	Analyte	Conc.	Units	Q Flags
M6S	13-MAY-93	Mercury	.11	ug/L	BNUJ CV
M6S	13-MAY-93	Mercury	.1	ug/L	NUJ CV
M6S	28-JUL-93	Mercury	.22	ug/L	U CV
M6S	28-JUL-93	Mercury	.22	ug/L	U CV
M6S	28-JUL-93	Mercury	.23	ug/L	U CV
M6S	28-JUL-93	Mercury	.13	ug/L	BU CV
M6S	05-NOV-93	Mercury	.1	ug/L	U CV
M6S	05-NOV-93	Mercury	.1	ug/L	U CV
M6S	18-JAN-94	Mercury	.1	ug/L	U CV
M6S	18-JAN-94	Mercury	.1	ug/L	U CV
M6S	18-APR-94	Mercury	.1	ug/L	U CV
M6S	18-APR-94	Mercury	.1	ug/L	U CV
M6S	20-JUN-94	Mercury	.1	ug/L	U CV
M6S	20-JUN-94	Mercury	.1	ug/L	U CV
M6S	02-NOV-94	Mercury	.1	ug/L	U CV
M6S	11-JAN-95	Mercury	.14	ug/L	B CV
M7S	20-OCT-92	Mercury	.1	ug/L	U CV
M7S	04-MAR-93	Mercury	.1	ug/L	U CV
M7S	04-MAR-93	Mercury	.1	ug/L	U CV
M7S	13-MAY-93	Mercury	.1	ug/L	NUJ CV
M7S	13-MAY-93	Mercury	.1	ug/L	NUJ CV
M7S	27-JUL-93	Mercury	.18	ug/L	BU CV
M7S	27-JUL-93	Mercury	.18	ug/L	BU CV
M7S	09-NOV-93	Mercury	.13	ug/L	B CV
M7S	09-NOV-93	Mercury	.11	ug/L	B CV
M7S	18-JAN-94	Mercury	.1	ug/L	U CV
M7S	18-JAN-94	Mercury	.1	ug/L	U CV

Table 7: ERIS Water Sample Inorganic Concentrations

Well	Date	Analyte	Conc.	Units	Q Flags
M7S	18-APR-94	Mercury	.1	ug/L	U CV
M7S	18-APR-94	Mercury	.1	ug/L	U CV
M7S	21-JUN-94	Mercury	.1	ug/L	U CV
M7S	21-JUN-94	Mercury	.12	ug/L	B CV
M7S	02-NOV-94	Mercury	.1	ug/L	U CV
M7S	12-JAN-95	Mercury	.1	ug/L	U CV
M10S	21-OCT-92	Nitrate	1350	ug/L	J
M10S	18-APR-94	Nitrate	1330	ug/L	
M10S	20-JUN-94	Nitrate	1380	ug/L	
M10S	02-NOV-94	Nitrate	1300	ug/L	
M10S	12-JAN-95	Nitrate	1060	ug/L	
M1S	19-OCT-92	Nitrate	603	ug/L	J
M1S	19-APR-94	Nitrate	974	ug/L	
M1S	20-JUN-94	Nitrate	958	ug/L	
M1S	02-NOV-94	Nitrate	916	ug/L	
M1S	11-JAN-95	Nitrate	842	ug/L	
M3S	20-OCT-92	Nitrate	824	ug/L	J
M3S	18-APR-94	Nitrate	870	ug/L	
M3S	20-JUN-94	Nitrate	890	ug/L	
M3S	02-NOV-94	Nitrate	839	ug/L	
M3S	12-JAN-95	Nitrate	698	ug/L	
M4D	21-OCT-92	Nitrate	614	ug/L	J
M4D	19-APR-94	Nitrate	734	ug/L	
M4D	19-APR-94	Nitrate	766	ug/L	
M4D	20-JUN-94	Nitrate	710	ug/L	
M4D	20-JUN-94	Nitrate	718	ug/L	
M4D	02-NOV-94	Nitrate	705	ug/L	

Table 7: ERIS Water Sample Inorganic Concentrations

Well	Date	Analyte	Conc.	Units	Q Flags
M4D	02-NOV-94	Nitrate	753	ug/L	
M4D	11-JAN-95	Nitrate	663	ug/L	
M4D	11-JAN-95	Nitrate	662	ug/L	
M6S	21-OCT-92	Nitrate	1330	ug/L	J
M6S	18-APR-94	Nitrate	1250	ug/L	
M6S	20-JUN-94	Nitrate	1650	ug/L	
M6S	02-NOV-94	Nitrate	1730	ug/L	
M6S	11-JAN-95	Nitrate	1060	ug/L	
M7S	20-OCT-92	Nitrate	482	ug/L	J
M7S	18-APR-94	Nitrate	730	ug/L	
M7S	21-JUN-94	Nitrate	2010	ug/L	
M7S	02-NOV-94	Nitrate	702	ug/L	
M7S	12-JAN-95	Nitrate	562	ug/L	

4.2 RWMC Environmental Surveillance Program Perched and Aquifer Inorganic Data

The following list of RWMC Environmental Surveillance Program (ESP) annual reports contain tabulated data on perched and aquifer inorganic data. [Complete references can be found in the previous Section 2.4.]

- 1979 Annual Report: EGG-2042
- 1980 Annual Report: EGG-2128
- 1981 Annual Report: EGG-2209
- 1982 Annual Report: EGG-2256
- 1983 Annual Report: EGG-2312
- 1984 Annual Report: EGG-2386
- 1985 Annual Report: EGG-2451
- 1986 Annual Report: EGG-2502
- 1987 Annual Report: EGG-2550
- 1988 Annual Report: EGG-2564
- 1989 Annual Report: EGG-2612
- 1990 Annual Report: EGG-2612(90)
- 1991 Annual Report: EGG-2679(91)

The reports contain analyses for samples taken from the USGS monitoring wells in and in the vicinity of the RWMC as well as the RWMC Production Well. Individual subsections are not presented for each years' results. Rather, the year and appropriate reference are included in the upper right-hand corner.

Table 7. 1979 subsurface water results at the RWMC—nonradioactive substances

<u>Well Number</u>	<u>Date Sampled</u>	<u>Specific Conductance (10^{-4} mho/cm)</u>	<u>Sodium (mg/L)</u>	<u>Chloride (mg/L)</u>
RWMC Production Well	Jan 79	2.8 ± 0.4		
	Apr 79	2.9 ± 0.4		
	Jul 79	3.1 ± 0.4		
	Oct 79	2.5 ± 0.4	7 ± 2	13 ± 2
87	Jan 79	2.7 ± 0.4		
	May 79	2.9 ± 0.4		
	Oct 79	2.6 ± 0.4	16 ± 4	26 ± 4
88	Jan 79	4.0 ± 0.4		
	May 79	3.7 ± 0.4		
	Jul 79	4.0 ± 0.4		
	Oct 79	3.5 ± 0.4	36 ± 8	70 ± 14
89	Jan 79	3.3 ± 0.4		
	May 79	3.1 ± 0.4		
	Jul 79	3.5 ± 0.4		
	Nov 79	3.0 ± 0.4	16 ± 4	47 ± 8
90	Jan 79	2.8 ± 0.4		
	May 79	3.0 ± 0.4		
	Jul 79	3.1 ± 0.4		
	Oct 79	2.7 ± 0.4	9 ± 2	13 ± 2
92	May 79	6.8 ± 0.4		
Natural background concentration ^a		3.25	10	15

a. From Robertson et al. (1974), (Reference 4), measured at locations remote to the RWMC.

Group A moisture cell locations consist of five holes, varying in depth from approximately 15 cm to 1.8 m. A moisture cell is placed at the bottom of each hole, and moisture cell number 3 is located at the lakebed/RWMC soil interface (Figure 8). All Group B and C locations contain three cells placed at depths of approximately 15, 30, and 60 cm. Each hole is backfilled and covered with a plastic sheath to restrict moisture entry into the disturbed soil.

Previous data⁶ indicated that the additional 0.9- to 1.5-m layer of compacted lakebed soil tended to stabilize moisture content and tempera-

ture at depths greater than 90 cm. The near-surface soil layers were rapidly affected by weather changes, while temperature and moisture content were only affected by seasonal changes. For example, when evaporation is high, surface soil layers dry quickly, even after a heavy rainfall, whereas deeper layers remain relatively stable.

Data for 1979 (Figures 9 through 11) were similar to that for 1978. The 1979 data indicated that a quantity of moisture entered shallow soil depths in mid-March, after four days of rain and warming temperatures. Following a short interval, moisture penetrated to the 0.6-m depth; the

Table 9. Specific conductance and chloride concentrations in 1980 subsurface water samples

<u>Well Number</u>	<u>Month Sampled</u>	<u>Specific Conductance^a (10^{-4} mhos/cm)</u>	<u>Chloride^a (mg/L)</u>
87	January	2.9 ± 0.4	--
	April	2.7 ± 0.4	--
	July	2.7 ± 0.4	--
	October	2.9 ± 0.4	16 ± 4
88	January	3.4 ± 0.4	--
	April	3.4 ± 0.4	--
	July	3.5 ± 0.4	--
	October	3.5 ± 0.4	78 ± 16
89	January	3.1 ± 0.4	--
	April	3.0 ± 0.4	--
	July	3.4 ± 0.4	--
	October	3.4 ± 0.4	50 ± 10
90	January	2.9 ± 0.4	--
	April	2.7 ± 0.4	--
	July	3.1 ± 0.4	--
	October	2.9 ± 0.4	13 ± 10
92	April	7.3 ± 0.4	-- ^b
Natural Background ^c	--	3.25	15

a. Analytical results are $\pm 2\sigma$.

b. Not measured.

c. From Robertson et al., 1974, Reference 4. Measured at locations remote to the RWMC.

Table 8. Specific conductance and chloride concentrations in 1981 subsurface water samples at the RWMC

<u>Well Number</u>	<u>Month Sampled</u>	<u>Specific Conductance^a (10^{-4} mhos/cm)</u>	<u>Chloride^{a,b} (PPM)</u>
87	January	3.0 ± 0.4	NMC
	April	2.8 ± 0.4	15 ± 4
	July	2.8 ± 0.4	13 ± 2
	October	3.0 ± 0.4	26 ± 6
88	January	3.8 ± 0.4	NMC
	April	3.3 ± 0.4	82 ± 16
	July	3.2 ± 0.4	82 ± 16
	October	3.8 ± 0.4	66 ± 14
89	January	3.7 ± 0.4	NMC
	April	3.4 ± 0.4	46 ± 10
	July	3.3 ± 0.4	44 ± 8
	October	3.5 ± 0.4	44 ± 8
90	January	3.2 ± 0.4	NMC
	April	2.9 ± 0.4	12 ± 2
	July	3.0 ± 0.4	13 ± 2
	October	3.0 ± 0.4	13 ± 2
92	April	6.9 ± 0.4	80 ± 16
	October	7.5 ± 0.4	72 ± 14
Production	January	3.1 ± 0.4	NMC
	April	3.0 ± 0.4	13 ± 2
	October	3.0 ± 0.4	11 ± 2
Natural Background^d		3.25	15
a. Analytical results are ±2 σ.			
b. Detection limit is 2 ppm.			
c. Not measured.			
d. From Robertson et al., 1974, Reference 4, measured at locations remote to the RWMC.			

Table 5. Specific conductance and concentrations of Cl⁻, Na⁺, and NO₃⁻ in subsurface water at the RWMC in 1982

	Month Sampled	Specific Conductance ^a (μmho/cm)	Concentration ^a (mg/L or ppm)		
			Cl ⁻	Na ⁺	NO ₃ ⁻
Well					
87	January	290 ± 40	NA ^b	NA	NA
	April	280 ± 60	20 ± 4	NA	NA
	July	240 ± 60	19 ± 4	NA	NA
	October	300 ± 60	21 ± 4	12 ± 2	4 ± 2
88	January	380 ± 40	NA	NA	NA
	April	330 ± 60	72 ± 14	NA	NA
	July	330 ± 60	91 ± 18	NA	NA
	October	370 ± 60	80 ± 16	27 ± 6	4 ± 2
89	January	350 ± 40	NA	NA	NA
	April	340 ± 60	43 ± 8	NA	NA
	July	310 ± 60	51 ± 10	NA	NA
	October	350 ± 60	50 ± 10	12 ± 2	12 ± 4
90	January	310 ± 40	NA	NA	NA
	April	280 ± 60	10 ± 2	NA	NA
	July	270 ± 60	12 ± 2	NA	NA
	October	320 ± 60	11 ± 2	8 ± 2	4 ± 2
PW ^c	January	310 ± 40	NA	NA	NA
	April	280 ± 60	14 ± 2	NA	NA
	July	300 ± 60	13 ± 2	NA	NA
	October	310 ± 60	13 ± 2	6 ± 2	3 ± 2
92	April	710 ± 60	90 ± 18	NA	NA
	October	710 ± 60	86 ± 18	NA	6 ± 2
Natural background ^d	—	325	10	10	1
Detection limit	—	NA	2	2	0.5

a. Analytical results ± 2 σ.

b. Not analyzed, not applicable.

c. RWMC Production Well.

d. From Robertson et al., 1974, Reference 7, measured at locations remote from the RWMC.

Table 14. Results of chemical analysis of subsurface water at the RWMC in 1983

Well	Month Sampled	Specific Conductance ($\mu\text{mhos}/\text{cm}$)	Concentration ^a (mg/L or ppm)		
			Cl^-	Na^+	NO_3^-
87	January	280 \pm 30	19 \pm 2	NA ^b	
	April	270 \pm 30	12 \pm 1	NA	
	July	290 \pm 30	14 \pm 1	NA	
	October	310 \pm 30	12 \pm 1	10 \pm 1	1.9
88	January	350 \pm 30	71 \pm 7	NA	
	April	350 \pm 30	84 \pm 8	NA	
	July	360 \pm 30	77 \pm 8	NA	
	October	600 \pm 30	98 \pm 10	20 \pm 2	7.7
89	January	350 \pm 30	47 \pm 5	NA	
	April	310 \pm 30	41 \pm 4	NA	
	July	320 \pm 30	41 \pm 4	NA	
	October	320 \pm 30	25 \pm 3	11 \pm 1	
90	January	320 \pm 30	12 \pm 1	NA	
	April	290 \pm 30	12 \pm 1	NA	
	July	320 \pm 30	13 \pm 1	NA	
	October	300 \pm 30	11 \pm 1	7 \pm 1	2.3
RWMC Production Well	January	310 \pm 30	11 \pm 1	NA	
	April	310 \pm 30	17 \pm 2	NA	
	July	310 \pm 30	13 \pm 1	NA	
	October	320 \pm 30	9 \pm 1	6 \pm 1	0.5
92	April	730 \pm 30	93 \pm 9	NA	
	October	800 \pm 30	67 \pm 7	NA	NA
Natural Background ^c (of aquifer)		300 - 325	8 - 15	8 - 10	<5
Detection limit		NA	2	2	0.5

a. Analytical results $\pm 1 \sigma$.

b. NA = Not analyzed.

c. Reference 7.

Table 18. Results of chemical analysis of subsurface water at the RWMC in 1984

Well	Month Sampled	Specific Conductance 10^{-4} (mhos/cm)	Concentration (mg/L or ppm) ^a	
			Cl ⁻	Na ⁺
87	January	2.8 ± 0.3	14 ± 1	—
	April	2.9 ± 0.3	14 ± 1	—
	July	2.8 ± 0.3	11 ± 1	—
	October	3.0 ± 0.3	15 ± 2	12 ± 1
88	January	6.1 ± 0.3	137 ± 14	—
	April	6.1 ± 0.3	105 ± 10	—
	July	5.8 ± 0.3	130 ± 13	—
	October	5.4 ± 0.3	98 ± 10	47 ± 5
89	January	3.2 ± 0.3	36 ± 4	—
	April	3.1 ± 0.3	27 ± 3	—
	July	3.0 ± 0.3	32 ± 3	—
	October	3.3 ± 0.3	26 ± 3	15 ± 2
90	January	3.1 ± 0.3	12 ± 1	—
	April	3.0 ± 0.3	10 ± 1	—
	July	2.9 ± 0.3	11 ± 1	—
	October	3.3 ± 0.3	12 ± 1	10 ± 1
RWMC Production Well	January	3.2 ± 0.3	13 ± 1	—
	April	3.1 ± 0.3	10 ± 1	—
	July	2.9 ± 0.3	12 ± 1	—
	October	2.9 ± 0.3	11 ± 1	8 ± 2
92	April	8.0 ± 0.3	69 ± 7	—
	October	8.5 ± 0.3	68 ± 7	NA ^b
Natural Background ^c (of aquifer)		300 - 325	8 - 15	8 - 10

a. Analytical uncertainties presented are $\pm 1\sigma$.

b. NA = Not analyzed.

c. Reference 7.

1983 following decontamination of the asphalt pad west of the Pad A mound. Measured nitrate concentrations for all other samples taken in the spring of 1984 are unusually high. If there was no error in laboratory analysis, then some unusual source of

nitrates raised the surface soil concentrations over a wide area in and around the RWMC. No mechanism, such as the spreading of chemical fertilizers, has been identified that could account for the elevated measurements. No quality assurance samples

Table 13. Results of chemical analysis of subsurface water at the RWMC in 1985

Well	Month Sampled	Specific Conductance 10^{-4} (mhos/cm)	Concentration (mg/L or ppm) ^a	
			Cl ⁻	Na ⁺
87	January	3.2 ± 0.3	20 ± 2	—
	April	3.1 ± 0.3	14 ± 1	—
	July	2.8 ± 0.3	15 ± 2	—
	October	3.1 ± 0.3	16 ± 2	15 ± 2
88	January	5.7 ± 0.3	100 ± 10	—
	April	5.5 ± 0.3	105 ± 11	—
	July	5.4 ± 0.3	84 ± 8	—
	October	5.5 ± 0.3	88 ± 9	45 ± 5
89	January	4.4 ± 0.3	64 ± 6	—
	April	4.6 ± 0.3	78 ± 8	—
	July	3.8 ± 0.3	60 ± 6	—
	October	3.3 ± 0.3	40 ± 4	25 ± 3
90	January	3.2 ± 0.3	18 ± 2	—
	April	NA ^b	NA	—
	July	NA	NA	—
	October	NA	NA	—
RWMC Production Well	January	3.2 ± 0.3	11 ± 1	8 ± 2
	April	3.0 ± 0.3	13 ± 1	—
	July	2.7 ± 0.3	11 ± 1	—
	October	3.0 ± 0.3	12 ± 1	8 ± 2
92	April	8.3 ± 0.3	76 ± 8	—
	October	8.0 ± 0.3	67 ± 7	100 ± 10
Natural Background ^c (of aquifer)		3.0 - 3.3	8 - 15	8 - 10

a. Analytical uncertainties presented are $\pm 1 \sigma$.

b. NA = Not analyzed.

c. Reference 7.

specific trace elements and inorganic chemical compounds (Sb, As, Be, B, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Tl, Zn, Cl, NO₃ + NO₂, and SO₄). The samples were collected and prepared using the

routine soil procedure. The samples were analyzed by EPA-certified Northern Engineering and Testing Laboratory in Billings, Montana.

Table 16. Results of chemical analysis of subsurface water at the RWMC in 1986

Well	Month Sampled	Specific Conductance	Concentration		$\mu\text{g/L}$
		10^{-4} (mhos/cm)	Cl^-	Na^+	
87	January	3.1 \pm 0.3	16 \pm 2	—	—
	April	3.1 \pm 0.3	11 \pm 1	—	—
	August	3.0 \pm 0.3	12 \pm 1	—	—
	October	3.0 \pm 0.3	13 \pm 1	10 \pm 2	—
88	January	5.7 \pm 0.3	92 \pm 9	—	—
	April	5.4 \pm 0.3	82 \pm 8	—	—
	August	5.7 \pm 0.3	82 \pm 8	—	—
	October	5.4 \pm 0.3	97 \pm 10	46 \pm 5	—
89	January	3.3 \pm 0.3	40 \pm 4	—	—
	April	3.2 \pm 0.3	34 \pm 3	—	—
	August	3.3 \pm 0.3	33 \pm 3	—	—
	October	3.0 \pm 0.3	37 \pm 4	20 \pm 2	56 \pm 10
90	January	3.2 \pm 0.3	18 \pm 2	—	—
	April	3.2 \pm 0.3	12 \pm 1	—	—
	August	3.3 \pm 0.3	11 \pm 1	—	—
	October	3.2 \pm 0.4	12 \pm 1	8 \pm 2	—
RWMC production well	February	3.0 \pm 0.3	13 \pm 1	—	—
	May	2.8 \pm 0.3	11 \pm 1	—	—
	August	3.1 \pm 0.3	10 \pm 2	—	—
	October	3.2 \pm 0.3	11 \pm 1	7 \pm 2	—
92	April	7.7 \pm 0.3	62 \pm 6	—	—
	October	8.2 \pm 0.3	82 \pm 8	100 \pm 10	—
Natural background ^b (of aquifer)		3.0 – 3.3	8 – 15	8 – 10	—

a. Analytical uncertainties presented are $\pm 1 \sigma$.

b. Reference 10.

Table 19. Results of chemical analysis of subsurface water at the RWMC in 1987

Well	Month Sampled	Specific Conductance 10^{-4} (mhos/cm)	Concentration (mg/L or ppm) ^a	
			Cl ⁻	Na ⁺
87	January	3.2 ± 0.3	13 ± 1	—
	April	3.2 ± 0.3	11 ± 1	—
	July	3.2 ± 0.3	16 ± 2	—
	September	3.0 ± 0.3	14 ± 1	11 ± 2
88	January	5.6 ± 0.3	95 ± 9	—
	April	5.7 ± 0.3	78 ± 8	—
	July	5.8 ± 0.3	84 ± 8	—
	October	5.4 ± 0.3	104 ± 10	45 ± 5
89	January	3.4 ± 0.3	41 ± 4	—
	April	3.5 ± 0.3	34 ± 3	—
	August	3.3 ± 0.3	40 ± 4	—
	October	3.0 ± 0.3	45 ± 5	19 ± 2
90	January	3.4 ± 0.3	12 ± 1	—
	April	3.3 ± 0.3	11 ± 1	—
	August	3.0 ± 0.3	14 ± 1	—
	October	3.2 ± 0.4	16 ± 2	9 ± 2
RWMC production well	January	3.4 ± 0.3	13 ± 1	—
	May	3.3 ± 0.3	10 ± 1	—
	August	3.2 ± 0.3	12 ± 1	—
	October	3.2 ± 0.3	14 ± 1	9 ± 2
92	April	8.2 ± 0.3	70 ± 7	—
	October	8.2 ± 0.3	82 ± 8	100 ± 10
Natural background ^b (of aquifer)		3.0 - 3.3	8 - 15	8 - 10

a. Analytical uncertainties presented are ± 1 σ.

b. Reference 8.

been measured in this well in recent years, there are no data for comparison.)

Groundwater samples for purgeable organics were collected in June, July, and August 1987 from wells at the RWMC and in July and October at Wells 9, 86, 105, and 109 near the INEL southwestern boundary (see Figure 43).² Dedicated pumps were installed in the boundary wells to improve sampling control. Well 92 at the RWMC was also sampled with a thief

sampler in October 1987. Samples were analyzed for 36 purgeable organic constituents. Concentrations of carbon tetrachloride, chloroform, 1,1,1-trichloroethane, and trichloroethylene were found above detection limits in several RWMC wells although all samples but one were below proposed EPA maximum contaminant levels of 5 µg/L for some organic constituents in drinking water (see Table 20).

Table 10. Results of specific conductance and chemical analysis of subsurface water at the RWMC in 1988

Well	Month Sampled	Specific Conductance μmhos/cm	Concentration (mg/L or ppm) ^a	
			Cl ⁻	Na ⁺
87	January	358	13 ± 1	—
	April	360	21 ± 2	—
	August	378	20 ± 2	—
	October	345	14 ± 2	8 ± 2
88	January	610	104 ± 10	—
	April	600	87 ± 9	—
	June	620	100 ± 10	—
	September	595	94 ± 9	52 ± 5
89	February	380	47 ± 5	—
	April	370	41 ± 4	—
	June	375	39 ± 4	—
	October	364	38 ± 4	13 ± 2
90	January	364	—	—
	April	369	16 ± 2	—
	June	367	15 ± 2	—
	October	360	14 ± 2	6 ± 2
RWMC production well	January	355	14 ± 1	—
	May	355	14 ± 1	—
	August	365	15 ± 2	—
	October	350	14 ± 2	5 ± 2
92 perched	April	932	80 ± 8	—
	November	912	74 ± 7	—
Natural background ^b (of aquifer)		3.0 – 3.3	8 – 15	8 – 10

a. The ± values are experimental random uncertainties in the counting measurement process and represent one standard deviation.

b. Reference: B. D. Lewis and R. G. Jensen, *Hydrologic Conditions at the Idaho National Engineering Laboratory*, Idaho, 1979-1981 update, HA-674, 1985.

Table 7. Results of chemical analysis of subsurface water at the RWMC in 1989

Well	Month Sampled	Specific Conductance $\mu\text{hos}/\text{cm}$	Concentration (ppm)	
			Cl^-	Na^+
87	January	352	21 ± 2	—
	April	360	14 ± 2	—
	July	370	18 ± 2	—
	October	340	10^{a}	9.7 ^a
88	January	NYA	NYA	—
	April	600	81 ± 8	—
	July	620	100 ± 10	—
	October	592	85^{a}	43 ^a
89	February	370	46 ± 5	—
	April	378	37 ± 4	—
	July	404	42 ± 4	—
	October	370	36^{a}	20 ^a
90	January	365	20 ± 16	—
	April	383	16 ± 2	—
	July	380	18 ± 2	—
	October	335	12^{a}	8.9 ^a
117	January	270	20 ± 2	—
	April	270	12 ± 2	—
	June	265	15 ± 2	—
	October	278	13 ± 2	9.7 ^a
119	January	278	16 ± 2	—
	April	298	10 ± 2	—
	June	300	12 ± 2	—
	October	270	9.2^{a}	11 ^a
120	January	460	33 ± 3	—
	April	468	22 ± 2	—
	July	505	30 ± 3	—
	October	486	24^{a}	35 ^a
RWMC production well	January	360	18 ± 2	—
	March	358	11 ± 2	—
	July	365	15 ± 2	—
	October	350	12^{a}	7.2 ^a
92 perched	April	980	80 ± 8	—
	October	NS	NS	—
Natural background ^b (of aquifer)		3.0 – 3.3	8 – 15	8 – 10

a. No uncertainty reported.

b. Reference: B. D. Lewis and R. G. Jensen, *Hydrologic Conditions at the Idaho National Engineering Laboratory*, Idaho, 1979–1981 update, HA-674, 1985.

NS – no sample taken.

Table 9. Results of chemical analyses of subsurface water at the RWMC in 1990

Well	Month Sampled	Specific	Concentration (ppm)	
		Conductance μmhos/cm	Cl ⁻	Na ⁺
87	January	350	—	—
	April	360	—	—
	July	362	—	—
	October	—	14	11
	November	365	—	—
88	January	580	99	—
	April	578	100	—
	July	595	92	—
	September	—	85	47
	November	570	—	—
89	January	365	40	—
	April	388	37	—
	July	380	39	—
	October	—	39	19
	November	a	—	—
90	January	350	13	—
	April	382	11	—
	July	355	11	—
	October	—	13	8.5
	November	360	—	—
117	January	—	—	—
	April	265	11	—
	July	278	19	—
	September	—	14	11
	November	262	—	—
119	January	—	—	—
	April	285	8.8	—
	June	290	—	—
	September	—	8	11
	November	288	—	—
120	January	470	27	—
	April	—	24	—
	July	486	27	—
	September	—	27	32
	November	452	—	—

Table 9. (continued)

<u>Well</u>	<u>Month Sampled</u>	<u>Specific Conductance μmhos/cm</u>	<u>Concentration (ppm)</u>	<u>Cl⁻</u>	<u>Na⁺</u>
RWMC production well	January	373	13	—	—
	March	380	15	—	—
	July	378	16	—	—
	September	360	—	—	—
	October	—	13	7.9	—
	November	365	—	—	—
	December	365	—	—	—
92 perched	—	—	—	—	—
Natural background ^b (of aquifer)	—	300-325	8-15	10	

a. Data not available

b. J. R. Pittman et al., *Hydrologic Conditions at the Idaho National Engineering Laboratory, Idaho, 1982-1985 update, 89-4008*, 1988.

— = No sample taken

Table 3. Results of chemical analyses of subsurface water at the RWMC in 1991.

Well	Month Sampled	Specific	Concentration (ppm)	
		Conductance μs/cm	Cl ⁻	Na ⁺
87	January	380	14	—
	April	365	15	—
	July	387	12	—
	October	372	17	11
88	January	590	85	—
	April	580	85	—
	May	—	86	—
	July	605	85	—
	October	580	90	45
89	January	380	41	—
	April	365	40	—
	July	387	40	—
	October	372	42	19
90	January	355	14	—
	April	359	17	—
	July	380	15	—
	October	368	16	8.6
117	January	270	16	—
	April	270	15	—
	July	280	14	—
	October	269	16	9.7
119	April	275	10	—
	May	—	10	—
	July	309	14	—
	October	280	12	11
120	January	461	25	—
	April	458	28	—
	May—	—	27	—
	July	435	24	—
	September	454	29	31

Table 3. (continued).

Well	Month Sampled	Specific	Concentration (ppm)	
		Conductance μs/cm	Cl ⁻	Na ⁺
RWMC Production Well	January	355	15	—
	February	365	—	—
	March	361	—	—
	April	372	14	—
	May	370	16	—
	July	367	11	—
	August	374	—	—
	September	370	—	—
	October	368	17	7.8
	November	—	—	—
	December	—	—	—
92 perched Natural background ^a (of aquifer)	October	1080	89	—
	—	300–325	8–15	10

a. J. R. Pittman et al., *Hydrologic Conditions at the Idaho National Engineering Laboratory, Idaho, 1982–1985 update, 89–4008*, 1988.

— = No sample taken

4.3 Other Perched Inorganic Data

Joel Hubbell has written a series of reports on perched water at the RWMC. The following tables are copied from two of those reports. [The complete references can be found earlier in Section 2.4.]

An earlier report titled “Hydrogeology and Geochemistry of the Unsaturated Zone, Radioactive Waste Management Complex, Idaho National Engineering Laboratory” by C. T. Rightmire and B. D. Lewis published in 1987 also contained inorganic perched water results. These same results are repeated in the first of the following tables.

Table 3. Major ion chemistry in perched water samples from the RWMC (in mg/L)

Well ID	Date Sampled	Na	K	Ca	Mg	SiO_2	B	Li	Sr	Zn	CO_3^2-	Cl	F	SO_4^2-	Al	Br	PO_4^3-	TDS	Temp °C	pH ^a	
92 ^b	04/10/72	79	5.9	26	25	13	0.11		.120		260	49		73	.380	0.1	0.21		13.5	9.1	
	10/29/76	120	12	29	17	22	0.11		.290		290	81	0.4		.330	0.3	0.18		13.5	8.39	
	05/02/77	120	12	42	17	22	0.11		.350		340	81	0.6	67	.080	0.0	0.12		11.9	7.67	
129	77-2 ^c	04/13/90	354	219	527	46.18	21.98	0.07	0.04	2.38	0.20	186	431	0.19	1765	<.61	<0.5	<1.84	3458.50	-	7.61
	8802D ^c	01/10/90	274	7.92	157	120	12.37	<0.05	<0.04	72	<0.06	189	669	0.44	410	<.61	<0.5	<1.84	1710	-	7.81

a. Laboratory pH.

b. Analyzed by Geological Survey Central Laboratory, Denver, Colorado.

c. Analyzed by University of Utah Research Institute (URRI).

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Table 5. Trace metals analyses from 8802D and 78-1, 1989 and 1990
(concentrations are in $\mu\text{g/L}$).

<u>Analyte</u>	<u>8802D^b 9-17-89</u>	<u>Blank 9-27-89</u>	<u>8802D^c 1-10-90</u>	<u>78-1^c 3-02-90</u>	<u>EPA^a 07-17-90</u>
Antimony	<18.0	<18.0	36.0	23.6	
Arsenic	168.0	<2.0	<2.0	<2.2	50
Barium	842.0	<3.0	49.0	12.0	1000
Beryllium	44.0	<2.0	<2.0	<2.0	
Cadmium	4.0	<2.0	<2.0	3.0	10
Chromium	857.0	<10.0	12.0	<10.0	50
Cobalt	508.0	<18.0	18.0	<10.0	
Copper	579.0	<18.0	18.0	<14.0	1000
Iron			2.0		
Lead	50.3	1.3	<0.1	3.6	50
Mercury	<0.1	<0.1	<0.1	<0.1	
Nickel	1080.0	<19.0	32.0	46.0	
Potassium					
Selenium	3.6	<1.0	12.4	<2.8	10
Silver	7.6	1.4	1.0	<1.2	50
Sodium					
Thallium	<1.0	<1.0	4.0	<0.8	
Vanadium	895.0	<14.0	34.0	<13.0	
Zinc	991.0	<14.0	<14.0	38.0	
Tin	<168.0	<168.0	251.0	<344.0	

a. EPA Primary Drinking Water Standards and Secondary Drinking Water Standard

b. Total metals

c. Dissolved metals

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Table 4. Summary of dissolved metals from perched water wells at the SDA (ug/l).

<u>Parameter</u>	<u>92</u>	<u>8802D</u>	<u>D10^d</u>	<u>77-2^d</u>	<u>EPA(P-S)^a</u>
Aluminum	99.0	43.0	184	167	
Antimony	<12.6	23.9	<70.8	70.0	
Arsenic	2.2	<2.0	<2.0	4.2	50(P)
Barium	134	42.0	1,260 ^b	224	1,000(P)
Beryllium	<4.0	<4.0	<4.0	6.4	
Cadmium	<4.0	<4.0	<4.0	16.1 ^b	10(P)
Calcium	65,500	86,000	305,000	1,240,000	
Chromium	<6.0	<6.0	50.0 ^b	<9.7	50(P)
Cobalt	<12.0	19.0	19.0	72.4	
Copper	<12.0	<7.0	<58.0	<35.4	1,000(S)
Iron	84.0	297	2290 ^c	330 ^c	300(S)
Lead	5.3 ^{UJ}	1.3 ^{UJ}	2.8 ^{UJ}	21.5 ^{UJ}	50(P)
Magnesium	14,600 ^d	123,000 ^d	<46.0	273,000 ^d	
Manganese	106 ^c	482 ^c	4.0 ^{UJ}	235 ^c	50(S)
Mercury	R	3.4 ^d	R	R	2(P)
Nickel	9.0	996	11.0	193	
Potassium	17,300	10,300	2,780,000	170,000	
Selenium	1.1 ^d	23.4 ^{bJ}	R	97.9 ^d	10(P)
Silver	1.0 ^{UJ}	1.0 ^{UJ}	1.0 ^{UJ}	1.6 ^{UJ}	50(P)
Sodium	120,000	351,000	224,000	886,000	
Thallium	R	R	R	R	
Vanadium	<15.0	<15.0	<15.0	<24.2	
Zinc	<31.0	<16.0	<6.0	945	5,000(S)

a. EPA Primary (P) or Secondary Drinking Water Standard (S).

b. Exceeds the EPA Primary Drinking Water Standards (40 CFR 141.11)

c. Exceeds the EPA Secondary Drinking Water Standard (40 CFR 143.3)

d. Exceeds EPA Secondary Drinking Water Standard for Total Dissolved Solids (40 CFR 143.3)

Qualifiers

R Data are unusable.

J Material detected, associated value is estimated.

UJ Material not detected, associated value is estimated.

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Table 6. Concentrations of anions and alkalinity from perched water wells at the SDA (ug/l).

PARAMETER	USGS 92	Well 8802D	Well D-10
Fluoride*	227 ^U	279 ^U	400 ^{UJ}
Chloride	80,400	635,000	4,980
Nitrite-N*	10 ^R	10 ^R	41 ^R
Ortho-Phosphate-P*	30 ^R	30 ^R	30 ^R
Nitrate-N*	582 ^R	2,040 ^R	130 ^R
Sulfate	78,700	40,800	6,290
Bromide	500	1.34	500
Alkalinity as ug/L CaCO ₃	332,000	56,000	4,100,000

EPA Primary Drinking Water Standards for fluoride and nitrate-N are 4,000 ug/l and 10,000 ug/l, respectively.

EPA Secondary Drinking Standards for sulfate and chloride are 250,000 ug/l

* Holding times were exceeded for nitrate, nitrite and ortho-phosphate.

^J The analyte was detected, numerical value is estimated.

^{UJ} The analyte was not detected, numerical value is estimated.

^R The data are unusable.

4.4 Subsurface Investigation Program Lysimeter Inorganic Data

The following tables are copied from the RWMC Subsurface Investigations Program (SIP) Annual Reports. The FY-1987 Annual Report was referenced earlier. The complete reference for the FY-1986 report is:

Hubbell, J. M., L. C. Hull, T. G. Humphrey, B. F. Russell, J. R. Pittman, and P. R Fisher, 1987, Annual Progress Report: FY-1986 Subsurface Investigations Program at the Radioactive Waste Management Complex of the Idaho National Engineering Laboratory, DOE/ID-10153.

The samples are from the shallow lysimeter network installed as part of the SIP. Data from FY-1988 and FY-1989 were never published. The data resides in a database under the custodianship of Joel Hubbell. A hard copy and disk copy of this chemistry data base was attached to an Engineering Design File submitted in 1994 to Doug Kuhns. This EDF was titled "Geosciences Site Data" and was numbered WAG7-94-001.1.

TABLE 9. MAJOR ION CHEMISTRY IN SOIL-WATER SAMPLES FROM THE RWMC

	Date Collected	Na (mg/L)	K (mg/L)	Ca (mg/L)	Mg (mg/L)	Sr (mg/L)	Zn (mg/L)	SiO ₂ (mg/L)	HCO ₃ ⁻ (mg/L)	Cl (mg/L)	F (mg/L)	SO ₄ (mg/L)	NO ₃ (mg/L)	Br (mg/L)	TDS (mg/L)
L03	06/11/86	701	4.1	100	37	0.7	0.85	73	-----	-----	-----	-----	-----	0.0	1062
L05	06/11/86	117	2.8	125	95	1.3	0.41	77	720	134	0.5	120	15	0.0	1062
L08	06/11/86	1590	17.0	655	175	2.9	0.36	73	-----	-----	-----	-----	-----	0.0	3186
L09	06/11/86	965	6.7	88	73	1.1	0.25	78	587	803	0.8	836	31	1.1	3186
L13	06/11/86	174	14.5	77	50	0.8	0.16	75	626	61	0.6	128	44	0.0	922
L15	06/11/86	579	4.9	72	38	0.6	0.00	72	1480	142	1.7	183	13	0.0	1836
L16	06/11/86	380	5.6	158	82	1.3	0.00	78	711	96	0.6	747	48	0.0	1962
L18	06/11/86	1360	9.5	513	1047	6.0	0.69	74	363	4507	0.4	1510	13	10.0	9422

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5. Inorganic Soil and Basalt Concentration Data

5.1 Environmental Restoration Data Soil and Basalt Concentrations

The following table presents results of Environmental Restoration soil and basalt sampling for inorganics. Samples for cadmium, chloride, lead, magnesium, mercury, and nitrate are included. The sampling results are contained in the Environmental Restoration Information System (ERIS) database and were queried by Mack Galusha. The data are all validated to at least level C. The data qualifiers are the same as those for the inorganic water concentrations presented above.

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
#1	PAD-A	23-MAR-92	Cadmium	2	mg/kg	0-5	N*JP
#10	PAD-A	18-MAR-92	Cadmium	1.3	mg/kg	0-5	P
#11	PAD-A	23-MAR-92	Cadmium	1.1	mg/kg	0-7	N*UJP
#12	PAD-A	17-MAR-92	Cadmium	1.3	mg/kg	0-4	*JP
#13	PAD-A	23-MAR-92	Cadmium	1.1	mg/kg	0-4	N*UJP
#14	PAD-A	19-MAR-92	Cadmium	1.1	mg/kg	0-9	UP
#15	PAD-A	19-MAR-92	Cadmium	1.5	mg/kg	0-2	N*JP
#16	PAD-A	17-MAR-92	Cadmium	1.1	mg/kg	0-4	*UJP
#17	PAD-A	19-MAR-92	Cadmium	1.3	mg/kg	0-6	P
#18	PAD-A	19-MAR-92	Cadmium	1.1	mg/kg	0-3.5	UP
#19	PAD-A	17-MAR-92	Cadmium	1.3	mg/kg	0-3	*UJP
#2	PAD-A	19-MAR-92	Cadmium	1.1	mg/kg	0-4.5	UP
#20	PAD-A	19-MAR-92	Cadmium	1.1	mg/kg	0-7	UP
#21	PAD-A	19-MAR-92	Cadmium	1.1	mg/kg	0-7	N*UJP
#22	PAD-A	17-MAR-92	Cadmium	1.3	mg/kg	0-7	*JP
#23	PAD-A	19-MAR-92	Cadmium	1.3	mg/kg	0-2.5	P
#24	PAD-A	19-MAR-92	Cadmium	1.4	mg/kg	0-3	P
#25	PAD-A	18-MAR-92	Cadmium	1.3	mg/kg	0-3.5	P
#25	PAD-A	18-MAR-92	Cadmium	1.3	mg/kg	0-3.5	P
#26	PAD-A	18-MAR-92	Cadmium	1.1	mg/kg	0-5	P

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
#27	PAD-A	17-MAR-92	Cadmium	1.1	mg/kg	0-3	U P
#28	PAD-A	18-MAR-92	Cadmium	1.1	mg/kg	0-4	P
#29	PAD-A	18-MAR-92	Cadmium	1.2	mg/kg	0-4	U P
#3	PAD-A	23-MAR-92	Cadmium	1.3	mg/kg	0-4.5	N*JP
#30	PAD-A	18-MAR-92	Cadmium	1.3	mg/kg	0-6	P
#31	PAD-A	18-MAR-92	Cadmium	1.2	mg/kg	0-1	U P
#32	PAD-A	17-MAR-92	Cadmium	1.2	mg/kg	0-5	*UJP
#33	PAD-A	16-MAR-92	Cadmium	1.1	mg/kg	0-8	*UJP
#34	PAD-A	16-MAR-92	Cadmium	1.1	mg/kg	0-7	*UJP
#35	PAD-A	16-MAR-92	Cadmium	1.1	mg/kg	0-4.5	*UJP
#36	PAD-A	16-MAR-92	Cadmium	1.1	mg/kg	0-5.5	*JP
#37	PAD-A	16-MAR-92	Cadmium	1.6	mg/kg	0-4	*JP
#38	PAD-A	16-MAR-92	Cadmium	1.1	mg/kg	0-9	*UJP
#38	PAD-A	16-MAR-92	Cadmium	1.4	mg/kg	0-9	*JP
#4	PAD-A	18-MAR-92	Cadmium	1.1	mg/kg	0-2.5	U P
#5	PAD-A	18-MAR-92	Cadmium	1.1	mg/kg	0-1.5	U P
#5	PAD-A	18-MAR-92	Cadmium	1.6	mg/kg	0-1.5	P
#6	PAD-A	19-MAR-92	Cadmium	1.1	mg/kg	0-3	N*JP
#7	PAD-A	19-MAR-92	Cadmium	1.1	mg/kg	0-6	N*JP
#8	PAD-A	17-MAR-92	Cadmium	1.1	mg/kg	0-3	JP
#9	PAD-A	18-MAR-92	Cadmium	1.6	mg/kg	0-3	P
76-1	FRACT BASALT	25-MAY-93	Cadmium	2.8	mg/kg	109-110	P
76-1	RUBBLE ZONE	25-MAY-93	Cadmium	2	mg/kg	204.9-205.9	P
76-2	RUBBLE ZONE	25-MAY-93	Cadmium	2.4	mg/kg	78-79	P
76-2	FRACT BASALT	25-MAY-93	Cadmium	1.4	mg/kg	147-148	P
76-2	FRACT BASALT	25-MAY-93	Cadmium	2	mg/kg	220.8-222	P
76-2	MASS BASALT	25-MAY-93	Cadmium	3	mg/kg	87-88	P

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
76-3	SED INTBED	25-MAY-93	Cadmium	2.6	mg/kg	25.8-27.7	P
76-3	MASS BASALT	25-MAY-93	Cadmium	1	mg/kg	215-215.8	NUJ P
76-3	FRACT BASALT	25-MAY-93	Cadmium	1	mg/kg	94-95	NUJ P
76-4	SED INTBED	25-MAY-93	Cadmium	2.5	mg/kg	20.5-23	P
76-4	SED INTBED	25-MAY-93	Cadmium	1.9	mg/kg	98.6-101.1	P
76-4A	SED INTBED	25-MAY-93	Cadmium	1.4	mg/kg	97.8-100.2	P
76-4A	SED INTBED	25-MAY-93	Cadmium	2.3	mg/kg	223.3-224.7	P
76-4A	FRACT BASALT	25-MAY-93	Cadmium	1.5	mg/kg	45-45.8	NJ P
76-5	MASS BASALT	25-MAY-93	Cadmium	1.1	mg/kg	45.1-46	NJ P
76-5	FRACT BASALT	25-MAY-93	Cadmium	1	mg/kg	48-49	NUJ P
77-2	RUBBLE ZONE	25-MAY-93	Cadmium	1	mg/kg	25.5-26	NUJ P
77-2	FRACT BASALT	25-MAY-93	Cadmium	1	mg/kg	72.6-73.5	NUJ P
77-2	FRACT BASALT	25-MAY-93	Cadmium	1	mg/kg	199.5-200.3	NJ P
78-1	RUBBLE ZONE	25-MAY-93	Cadmium	1	mg/kg	23.6-24.5	NUJ P
78-1	RUBBLE ZONE	25-MAY-93	Cadmium	1	mg/kg	66-66.5	NUJ P
78-2	RUBBLE ZONE	25-MAY-93	Cadmium	1	mg/kg	32.8-33.4	NJ P
78-2	RUBBLE ZONE	25-MAY-93	Cadmium	1.8	mg/kg	126.5-127.8	NJ P
78-2	SED INTBED	25-MAY-93	Cadmium	1	mg/kg	226.3-230.1	NUJ P
78-3	RUBBLE ZONE	25-MAY-93	Cadmium	1	mg/kg	56.5-57.7	NUJ P
78-3	MASS BASALT	25-MAY-93	Cadmium	1	mg/kg	122.4-123.3	NUJ P
78-3	RUBBLE ZONE	25-MAY-93	Cadmium	1.4	mg/kg	198.7-199.7	NJ P
78-5	RUBBLE ZONE	25-MAY-93	Cadmium	1	mg/kg	65.5-66.8	NUJ P
78-5	RUBBLE ZONE	25-MAY-93	Cadmium	1.2	mg/kg	130.6-132	NJ P
78-5	MASS BASALT	25-MAY-93	Cadmium	1	mg/kg	172.9-173.7	NUJ P
78-5	FRACT BASALT	26-MAY-93	Cadmium	1	mg/kg	220.3-224.7	NUJ P
79-2	FRACT BASALT	26-MAY-93	Cadmium	1	mg/kg	27-29	U P
79-2	MASS BASALT	26-MAY-93	Cadmium	1	mg/kg	221.5-222.5	U P

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
79-2	FRACT BASALT	26-MAY-93	Cadmium	1	mg/kg	70-70.6	U P
79-3	RUBBLE ZONE	26-MAY-93	Cadmium	1	mg/kg	53.9-55	U P
79-3	FRACT BASALT	26-MAY-93	Cadmium	1	mg/kg	100.6-101.8	U P
8801D	RUBBLE ZONE	25-MAY-93	Cadmium	2.8	mg/kg	43.2-44.7	P
8801D	FRACT BASALT	25-MAY-93	Cadmium	2.4	mg/kg	170.3-171.3	P
8801D	FRACT BASALT	25-MAY-93	Cadmium	2.8	mg/kg	87-89	P
8802D	RUBBLE ZONE	25-MAY-93	Cadmium	1.9	mg/kg	95-96	P
8901D	SED INTBED	25-MAY-93	Cadmium	4	mg/kg	238.1-239.3	P
8901D	SED INTBED	25-MAY-93	Cadmium	3.4	mg/kg	243.1-245.2	P
D-10	RUBBLE ZONE	25-MAY-93	Cadmium	3	mg/kg	152-153	P
D-10	FRACT BASALT	25-MAY-93	Cadmium	2.5	mg/kg	220-221.5	P
D-10	RUBBLE ZONE	25-MAY-93	Cadmium	2.7	mg/kg	194-196	P
M10S	MW	03-JUN-92	Cadmium	2.3	MG/KG	240-245	U P
M10S	MW	03-JUN-92	Cadmium	1.5	MG/KG	245-247	U P
M1S	MW	03-JUN-92	Cadmium	1	MG/KG	223-225	U P
M1S	MW	03-JUN-92	Cadmium	2.1	MG/KG	225-226	U P
PEN. 1	SDA PIT 9	28-NOV-90	Cadmium	.62	MG/KG	20-22	U P
PEN. 1	SDA PIT 9	28-NOV-90	Cadmium	.61	MG/KG	0-2	U P
PEN. 1	SDA PIT 9	28-NOV-90	Cadmium	.6	MG/KG	8-10	U P
PEN. 2	SDA PIT 9	26-NOV-90	Cadmium	.83	MG/KG	0-2	U P
PEN. 2	SDA PIT 9	26-NOV-90	Cadmium	.8	MG/KG	8-10	U P
PEN. 2	SDA PIT 9	26-NOV-90	Cadmium	.95	MG/KG	16-16.9	U P
PEN. 3	SDA PIT 9	15-NOV-90	Cadmium	.81	MG/KG	0-2	U P
PEN. 3	SDA PIT 9	15-NOV-90	Cadmium	.84	MG/KG	4-6	U P
PEN. 3	SDA PIT 9	15-NOV-90	Cadmium	.95	MG/KG	8-9.9	U P
PEN. 4	SDA PIT 9	29-NOV-90	Cadmium	.69	MG/KG	16-18	U P
PEN. 4	SDA PIT 9	29-NOV-90	Cadmium	.63	MG/KG	0-2	U P

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
PEN. 4	SDA PIT 9	29-NOV-90	Cadmium	.66	MG/KG	8-10	UP
PEN. 5	SDA PIT 9	21-NOV-90	Cadmium	.84	MG/KG	0-2	UP
PEN. 5	SDA PIT 9	21-NOV-90	Cadmium	.9	MG/KG	6-8	UP
PEN. 5	SDA PIT 9	21-NOV-90	Cadmium	.9	MG/KG	20-20.8	UP
PEN. 6	SDA PIT 9	19-NOV-90	Cadmium	.85	MG/KG	4-6	UP
PEN. 6	SDA PIT 9	19-NOV-90	Cadmium	.8	MG/KG	0-2	UP
PEN. 7	SDA PIT 9	20-NOV-90	Cadmium	.8	MG/KG	0-2	UP
PEN. 7	SDA PIT 9	21-NOV-90	Cadmium	.74	MG/KG	8-10	UP
PEN. 7	SDA PIT 9	21-NOV-90	Cadmium	.92	MG/KG	14-15.4	UP
PEN. 8	SDA PIT 9	27-NOV-90	Cadmium	.82	MG/KG	0-2	UP
PEN. 8	SDA PIT 9	27-NOV-90	Cadmium	.91	MG/KG	14-15	UP
PEN. 8	SDA PIT 9	27-NOV-90	Cadmium	.79	MG/KG	8-10	UP
PEN. 8	SDA PIT 9	27-NOV-90	Cadmium	.95	MG/KG	14-15	UP
GS-91	FRACT BASALT	26-MAY-93	Cadmium	1	mg/kg	23.4-25	UP
GS-91	RUBBLE ZONE	26-MAY-93	Cadmium	1	mg/kg	106-108	UP
GS-93	FRACT BASALT	26-MAY-93	Cadmium	1	mg/kg	14-16	UP
GS-93	FRACT BASALT	26-MAY-93	Cadmium	1	mg/kg	222.5-236	UP
GS-94	FRACT BASALT	26-MAY-93	Cadmium	1	mg/kg	116.3-118	UP
GS-94	FRACT BASALT	26-MAY-93	Cadmium	1	mg/kg	217-220.2	UP
GS-94	FRACT BASALT	26-MAY-93	Cadmium	1	mg/kg	26.1-28	UP
GS-95	FRACT BASALT	26-MAY-93	Cadmium	1	mg/kg	76-114.4	UP
GS-95	FRACT BASALT	26-MAY-93	Cadmium	1	mg/kg	235.2-239	UP
76-1	FRACT BASALT	25-MAY-93	Chloride	10	mg/kg	109-110	UJ
76-1	RUBBLE ZONE	25-MAY-93	Chloride	10.8	mg/kg	204.9-205.9	J
76-2	RUBBLE ZONE	25-MAY-93	Chloride	15.6	mg/kg	78-79	J
76-2	MASS BASALT	25-MAY-93	Chloride	10	mg/kg	87-88	UJ
76-2	FRACT BASALT	25-MAY-93	Chloride	10	mg/kg	147-148	UJ

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
76-2	FRACT BASALT	25-MAY-93	Chloride	10	mg/kg	220.8-221.5	UJ
76-3	SED INTBED	25-MAY-93	Chloride	265	mg/kg	25.8-27.7	J
76-3	MASS BASALT	25-MAY-93	Chloride	10	mg/kg	215-215.8	U
76-3	FRACT BASALT	25-MAY-93	Chloride	10	mg/kg	94-95	U
76-4	SED INTBED	25-MAY-93	Chloride	664	mg/kg	20.5-23	J
76-4	SED INTBED	25-MAY-93	Chloride	101	mg/kg	98.6-101.1	J
76-4A	SED INTBED	25-MAY-93	Chloride	63.8	mg/kg	97.8-100.2	J
76-4A	FRACT BASALT	25-MAY-93	Chloride	10	mg/kg	45-45.8	U
76-4A	SED INTBED	25-MAY-93	Chloride	10.3	mg/kg	223.3-224.7	UJ
76-5	MASS BASALT	25-MAY-93	Chloride	17.5	mg/kg	45.1-46	
76-5	FRACT BASALT	25-MAY-93	Chloride	53.4	mg/kg	48-49	
77-2	RUBBLE ZONE	25-MAY-93	Chloride	10	mg/kg	25.5-26	U
77-2	FRACT BASALT	25-MAY-93	Chloride	191	mg/kg	72.6-73.5	
77-2	FRACT BASALT	25-MAY-93	Chloride	12.2	mg/kg	199.5-200.3	
78-1	RUBBLE ZONE	25-MAY-93	Chloride	10	mg/kg	23.6-24.5	U
78-1	RUBBLE ZONE	25-MAY-93	Chloride	10	mg/kg	66-66.8	U
78-2	RUBBLE ZONE	25-MAY-93	Chloride	10	mg/kg	32.8-33.4	U
78-2	SED INTBED	25-MAY-93	Chloride	10	mg/kg	226.3-230.1	U
78-2	RUBBLE ZONE	25-MAY-93	Chloride	10	mg/kg	126.5-127.8	U
78-3	RUBBLE ZONE	25-MAY-93	Chloride	18	mg/kg	56.5-57.7	
78-3	MASS BASALT	25-MAY-93	Chloride	14.1	mg/kg	122.4-123.3	
78-3	RUBBLE ZONE	25-MAY-93	Chloride	22.9	mg/kg	198.7-199.7	
78-5	RUBBLE ZONE	25-MAY-93	Chloride	16.1	mg/kg	65.5-66.8	
78-5	MASS BASALT	25-MAY-93	Chloride	10	mg/kg	172.9-173.7	U
78-5	RUBBLE ZONE	25-MAY-93	Chloride	10	mg/kg	130.6-132	U
78-5	FRACT BASALT	26-MAY-93	Chloride	10	mg/kg	220.3-224.7	U
79-2	FRACT BASALT	26-MAY-93	Chloride	316	mg/kg	27-29	

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
79-2	FRACT BASALT	26-MAY-93	Chloride	47.2	mg/kg	70-70.6	
79-2	MASS BASALT	26-MAY-93	Chloride	10	mg/kg	221.5-222.5	U
79-3	RUBBLE ZONE	26-MAY-93	Chloride	19.4	mg/kg	53.9-55	
79-3	FRACT BASALT	26-MAY-93	Chloride	10.3	mg/kg	100.6-101.8	U
8801D	RUBBLE ZONE	25-MAY-93	Chloride	10.1	mg/kg	43.2-44.7	UJ
8801D	FRACT BASALT	25-MAY-93	Chloride	10.1	mg/kg	87-89	UJ
8801D	FRACT BASALT	25-MAY-93	Chloride	117	mg/kg	170.3-171.3	J
8802D	RUBBLE ZONE	25-MAY-93	Chloride	12.2	mg/kg	95-96	J
8901D	SED INTBED	25-MAY-93	Chloride	198	mg/kg	238.1-239.3	J
8901D	SED INTBED	25-MAY-93	Chloride	213	mg/kg	243.1-245.2	J
D-10	RUBBLE ZONE	25-MAY-93	Chloride	154	mg/kg	152-153	J
D-10	RUBBLE ZONE	25-MAY-93	Chloride	39.2	mg/kg	194-196	J
D-10	FRACT BASALT	25-MAY-93	Chloride	10.2	mg/kg	220-221.5	UJ
GS-91	FRACT BASALT	26-MAY-93	Chloride	162	mg/kg	23.4-25	
GS-91	RUBBLE ZONE	26-MAY-93	Chloride	73.2	mg/kg	106-108	
GS-93	FRACT BASALT	26-MAY-93	Chloride	151	mg/kg	14-16	
GS-93	FRACT BASALT	26-MAY-93	Chloride	10.1	mg/kg	222.5-236	U
GS-94	FRACT BASALT	26-MAY-93	Chloride	10	mg/kg	116.3-118	U
GS-94	FRACT BASALT	26-MAY-93	Chloride	10.6	mg/kg	217-220.2	
GS-94	FRACT BASALT	26-MAY-93	Chloride	10	mg/kg	26.1-28	U
GS-95	FRACT BASALT	26-MAY-93	Chloride	10	mg/kg	76-114.4	U
GS-95	FRACT BASALT	26-MAY-93	Chloride	10	mg/kg	235.2-239	U
#1	PAD-A	23-MAR-92	Lead	13.4	mg/kg	0-5	F
#10	PAD-A	18-MAR-92	Lead	13.1	mg/kg	0-5	F
#11	PAD-A	23-MAR-92	Lead	13.1	mg/kg	0-7	F
#12	PAD-A	17-MAR-92	Lead	13.7	mg/kg	0-4	F
#13	PAD-A	23-MAR-92	Lead	15	mg/kg	0-4	F

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
#14	PAD-A	19-MAR-92	Lead	13.2	mg/kg	0-9	F
#15	PAD-A	19-MAR-92	Lead	12.4	mg/kg	0-2	F
#16	PAD-A	17-MAR-92	Lead	12.3	mg/kg	0-4	F
#17	PAD-A	19-MAR-92	Lead	22.3	mg/kg	0-6	S F
#18	PAD-A	19-MAR-92	Lead	21.9	mg/kg	0-3.5	+J F
#19	PAD-A	17-MAR-92	Lead	22.5	mg/kg	0-3	F
#2	PAD-A	19-MAR-92	Lead	18.6	mg/kg	0-4.5	S F
#20	PAD-A	19-MAR-92	Lead	12.2	mg/kg	0-7	F
#21	PAD-A	19-MAR-92	Lead	12.9	mg/kg	0-7	F
#22	PAD-A	17-MAR-92	Lead	15.3	mg/kg	0-7	F
#23	PAD-A	19-MAR-92	Lead	14.9	mg/kg	0-2.5	S F
#24	PAD-A	19-MAR-92	Lead	11.6	mg/kg	0-3	F
#25	PAD-A	18-MAR-92	Lead	13	mg/kg	0-3.5	F
#25	PAD-A	18-MAR-92	Lead	21.1	mg/kg	0-3.5	+J F
#26	PAD-A	18-MAR-92	Lead	14	mg/kg	0-5	F
#27	PAD-A	17-MAR-92	Lead	11.7	mg/kg	0-3	F
#28	PAD-A	18-MAR-92	Lead	14	mg/kg	0-4	F
#29	PAD-A	18-MAR-92	Lead	19.4	mg/kg	0-4	S F
#3	PAD-A	23-MAR-92	Lead	13.8	mg/kg	0-4.5	F
#30	PAD-A	18-MAR-92	Lead	13.1	mg/kg	0-6	F
#31	PAD-A	18-MAR-92	Lead	15.6	mg/kg	0-1	S F
#32	PAD-A	17-MAR-92	Lead	13.5	mg/kg	0-5	F
#33	PAD-A	16-MAR-92	Lead	13.3	mg/kg	0-8	F
#34	PAD-A	16-MAR-92	Lead	13	mg/kg	0-7	F
#35	PAD-A	16-MAR-92	Lead	12.8	mg/kg	0-4.5	F
#36	PAD-A	16-MAR-92	Lead	13.2	mg/kg	0-5.5	F
#37	PAD-A	16-MAR-92	Lead	11.6	mg/kg	0-4	F

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
#38	PAD-A	16-MAR-92	Lead	14.2	mg/kg	0-9	S F
#38	PAD-A	16-MAR-92	Lead	14.9	mg/kg	0-9	S F
#4	PAD-A	18-MAR-92	Lead	14.6	mg/kg	0-2.5	S F
#5	PAD-A	18-MAR-92	Lead	16.5	mg/kg	0-1.5	S F
#5	PAD-A	18-MAR-92	Lead	16.5	mg/kg	0-1.5	S F
#6	PAD-A	19-MAR-92	Lead	13.2	mg/kg	0-3	F
#7	PAD-A	19-MAR-92	Lead	13.8	mg/kg	0-6	F
#8	PAD-A	17-MAR-92	Lead	10.1	mg/kg	0-3	F
#9	PAD-A	18-MAR-92	Lead	13.4	mg/kg	0-3	F
76-1	FRACT BASALT	25-MAY-93	Lead	1.1	mg/kg	109-110	*J F
76-1	RUBBLE ZONE	25-MAY-93	Lead	1.5	mg/kg	204.9-205.9	*J F
76-2	RUBBLE ZONE	25-MAY-93	Lead	2	mg/kg	78-79	*J F
76-2	MASS BASALT	25-MAY-93	Lead	.89	mg/kg	87-88	*J F
76-2	FRACT BASALT	25-MAY-93	Lead	.92	mg/kg	220.8-222	*J F
76-2	FRACT BASALT	25-MAY-93	Lead	.99	mg/kg	147-148	*J F
76-3	SED INTBED	25-MAY-93	Lead	5	mg/kg	25.8-27.7	* F
76-3	MASS BASALT	25-MAY-93	Lead	2	mg/kg	215-215.8	N*R F
76-3	FRACT BASALT	25-MAY-93	Lead	1.3	mg/kg	94-95	N*R F
76-4	SED INTBED	25-MAY-93	Lead	13.7	mg/kg	20.5-23	* F
76-4	SED INTBED	25-MAY-93	Lead	4.9	mg/kg	98.6-101.1	* F
76-4A	SED INTBED	25-MAY-93	Lead	7.6	mg/kg	97.8-100.2	* F
76-4A	SED INTBED	25-MAY-93	Lead	21.7	mg/kg	223.3-224.7	*+J F
76-4A	FRACT BASALT	25-MAY-93	Lead	1.3	mg/kg	45-45.8	N*R F
76-5	MASS BASALT	25-MAY-93	Lead	1.1	mg/kg	45.1-46	N*R F
76-5	FRACT BASALT	25-MAY-93	Lead	1.4	mg/kg	48-49	N*R F
77-2	RUBBLE ZONE	25-MAY-93	Lead	1.7	mg/kg	25.5-26	N*R F
77-2	FRACT BASALT	25-MAY-93	Lead	2.4	mg/kg	72.6-73.5	N*R F

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
77-2	FRACT BASALT	25-MAY-93	Lead	1.4	mg/kg	199.5-200.3	N*R F
78-1	RUBBLE ZONE	25-MAY-93	Lead	6.6	mg/kg	23.6-24.5	NS*R F
78-1	RUBBLE ZONE	25-MAY-93	Lead	3.3	mg/kg	66-66.5	N*R F
78-2	RUBBLE ZONE	25-MAY-93	Lead	3.5	mg/kg	32.8-33.4	N*R F
78-2	RUBBLE ZONE	25-MAY-93	Lead	2.9	mg/kg	126.5-127.8	N*R F
78-2	SED INTBED	25-MAY-93	Lead	4.5	mg/kg	226.3-230.1	N*R F
78-3	RUBBLE ZONE	25-MAY-93	Lead	3.3	mg/kg	56.5-57.7	N*R F
78-3	MASS BASALT	25-MAY-93	Lead	1.5	mg/kg	122.4-123.3	N*R F
78-3	RUBBLE ZONE	25-MAY-93	Lead	1.1	mg/kg	198.7-199.7	N*R F
78-5	RUBBLE ZONE	25-MAY-93	Lead	3	mg/kg	65.5-66.8	N*R F
78-5	MASS BASALT	25-MAY-93	Lead	3.5	mg/kg	172.9-173.7	NS*R F
78-5	RUBBLE ZONE	25-MAY-93	Lead	1.3	mg/kg	130.6-132	N*R F
78-5	FRACT BASALT	26-MAY-93	Lead	1.9	mg/kg	220.3-224.7	N*R F
79-2	FRACT BASALT	26-MAY-93	Lead	5.8	mg/kg	27-29	F
79-2	FRACT BASALT	26-MAY-93	Lead	1.3	mg/kg	70-70.6	UF
79-2	MASS BASALT	26-MAY-93	Lead	3.1	mg/kg	221.5-222.5	F
79-3	RUBBLE ZONE	26-MAY-93	Lead	1	mg/kg	53.9-55	UF
79-3	FRACT BASALT	26-MAY-93	Lead	6.5	mg/kg	100.6-101.8	F
8801D	RUBBLE ZONE	25-MAY-93	Lead	.98	mg/kg	43.2-44.7	*J F
8801D	FRACT BASALT	25-MAY-93	Lead	.79	mg/kg	87-89	*J F
8801D	FRACT BASALT	25-MAY-93	Lead	.57	mg/kg	170.3-171.3	B*J F
8802D	RUBBLE ZONE	25-MAY-93	Lead	1.8	mg/kg	95-96	*J F
8901D	SED INTBED	25-MAY-93	Lead	21	mg/kg	238.1-239.3	* F
8901D	SED INTBED	25-MAY-93	Lead	24.4	mg/kg	243.1-245.2	* F
D-10	RUBBLE ZONE	25-MAY-93	Lead	2.5	mg/kg	152-153	*J F
D-10	FRACT BASALT	25-MAY-93	Lead	1.4	mg/kg	220-221.5	*J F
D-10	RUBBLE ZONE	25-MAY-93	Lead	3.7	mg/kg	194-196	* F

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
M10S	MW	03-JUN-92	Lead	24	MG/KG	240-245	S F
M10S	MW	03-JUN-92	Lead	27.2	MG/KG	245-247	S F
M1S	MW	03-JUN-92	Lead	20.7	MG/KG	223-225	S F
M1S	MW	03-JUN-92	Lead	26.4	MG/KG	225-226	S F
PEN. 1	SDA PIT 9	28-NOV-90	Lead	6.1	MG/KG	20-22	B F
PEN. 1	SDA PIT 9	28-NOV-90	Lead	12.4	MG/KG	0-2	F
PEN. 1	SDA PIT 9	28-NOV-90	Lead	7.2	MG/KG	8-10	B F
PEN. 2	SDA PIT 9	26-NOV-90	Lead	12.2	MG/KG	0-2	N F
PEN. 2	SDA PIT 9	26-NOV-90	Lead	4.6	MG/KG	8-10	N F
PEN. 2	SDA PIT 9	26-NOV-90	Lead	9.1	MG/KG	16-16.9	N F
PEN. 3	SDA PIT 9	15-NOV-90	Lead	7.2	MG/KG	0-2	BNS* F
PEN. 3	SDA PIT 9	15-NOV-90	Lead	9	MG/KG	4-6	N* F
PEN. 3	SDA PIT 9	15-NOV-90	Lead	7.2	MG/KG	8-9.9	N* F
PEN. 4	SDA PIT 9	29-NOV-90	Lead	10.3	MG/KG	16-18	B F
PEN. 4	SDA PIT 9	29-NOV-90	Lead	11.8	MG/KG	0-2	F
PEN. 4	SDA PIT 9	29-NOV-90	Lead	14.8	MG/KG	8-10	F
PEN. 5	SDA PIT 9	21-NOV-90	Lead	13.7	MG/KG	0-2	F
PEN. 5	SDA PIT 9	21-NOV-90	Lead	16.2	MG/KG	6-8	
PEN. 5	SDA PIT 9	21-NOV-90	Lead	11.3	MG/KG	20-20.8	F
PEN. 6	SDA PIT 9	19-NOV-90	Lead	14.7	MG/KG	4-6	F
PEN. 6	SDA PIT 9	19-NOV-90	Lead	26	MG/KG	0-2	F
PEN. 7	SDA PIT 9	20-NOV-90	Lead	15.5	MG/KG	0-2	S F
PEN. 7	SDA PIT 9	21-NOV-90	Lead	8	MG/KG	8-10	F
PEN. 7	SDA PIT 9	21-NOV-90	Lead	13.8	MG/KG	14-15.4	F
PEN. 8	SDA PIT 9	27-NOV-90	Lead	12	MG/KG	0-2	N F
PEN. 8	SDA PIT 9	27-NOV-90	Lead	6.2	MG/KG	8-10	BN F
PEN. 8	SDA PIT 9	27-NOV-90	Lead	8	MG/KG	14-15	BN F

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
PEN. 8	SDA PIT 9	27-NOV-90	Lead	8	MG/KG	14-15	BN F
GS-91	FRACT BASALT	26-MAY-93	Lead	3.1	mg/kg	23.4-25	F
GS-91	RUBBLE ZONE	26-MAY-93	Lead	4.8	mg/kg	106-108	F
GS-93	FRACT BASALT	26-MAY-93	Lead	5.3	mg/kg	14-16	F
GS-93	FRACT BASALT	26-MAY-93	Lead	3.4	mg/kg	222.5-236	F
GS-94	FRACT BASALT	26-MAY-93	Lead	.74	mg/kg	116.3-118	UF
GS-94	FRACT BASALT	26-MAY-93	Lead	1.5	mg/kg	217-220.2	UF
GS-94	FRACT BASALT	26-MAY-93	Lead	1.2	mg/kg	26.1-28	UF
GS-95	FRACT BASALT	26-MAY-93	Lead	2.1	mg/kg	76-114.4	F
GS-95	FRACT BASALT	26-MAY-93	Lead	1.2	mg/kg	235.2-239	UF
#1	PAD-A	23-MAR-92	Magnesium	10400	mg/kg	0-5	P
#10	PAD-A	18-MAR-92	Magnesium	10200	mg/kg	0-5	P
#11	PAD-A	23-MAR-92	Magnesium	7070	mg/kg	0-7	P
#12	PAD-A	17-MAR-92	Magnesium	8740	mg/kg	0-4	BEJ P
#13	PAD-A	23-MAR-92	Magnesium	9930	mg/kg	0-4	P
#14	PAD-A	19-MAR-92	Magnesium	8870	mg/kg	0-9	P
#15	PAD-A	19-MAR-92	Magnesium	9040	mg/kg	0-2	P
#16	PAD-A	17-MAR-92	Magnesium	7260	mg/kg	0-4	BEJ P
#17	PAD-A	19-MAR-92	Magnesium	9280	mg/kg	0-6	B P
#18	PAD-A	19-MAR-92	Magnesium	8130	mg/kg	0-3.5	P
#19	PAD-A	17-MAR-92	Magnesium	10000	mg/kg	0-3	BEJ P
#2	PAD-A	19-MAR-92	Magnesium	9670	mg/kg	0-4.5	B P
#20	PAD-A	19-MAR-92	Magnesium	8270	mg/kg	0-7	P
#21	PAD-A	19-MAR-92	Magnesium	8640	mg/kg	0-7	P
#22	PAD-A	17-MAR-92	Magnesium	8710	mg/kg	0-7	BEJ P
#23	PAD-A	19-MAR-92	Magnesium	8650	mg/kg	0-2.5	P
#24	PAD-A	19-MAR-92	Magnesium	7720	mg/kg	0-3	P

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
#25	PAD-A	18-MAR-92	Magnesium	10500	mg/kg	0-3.5	P
#25	PAD-A	18-MAR-92	Magnesium	9450	mg/kg	0-3.5	P
#26	PAD-A	18-MAR-92	Magnesium	10600	mg/kg	0-5	B P
#27	PAD-A	17-MAR-92	Magnesium	9840	mg/kg	0-3	P
#28	PAD-A	18-MAR-92	Magnesium	9490	mg/kg	0-4	P
#29	PAD-A	18-MAR-92	Magnesium	10300	mg/kg	0-4	P
#3	PAD-A	23-MAR-92	Magnesium	9860	mg/kg	0-4.5	P
#30	PAD-A	18-MAR-92	Magnesium	9630	mg/kg	0-6	P
#31	PAD-A	18-MAR-92	Magnesium	10100	mg/kg	0-1	P
#32	PAD-A	17-MAR-92	Magnesium	5840	mg/kg	0-5	BEJ P
#33	PAD-A	16-MAR-92	Magnesium	5550	mg/kg	0-8	BEJ P
#34	PAD-A	16-MAR-92	Magnesium	9020	mg/kg	0-7	BEJ P
#35	PAD-A	16-MAR-92	Magnesium	8220	mg/kg	0-4.5	BEJ P
#36	PAD-A	16-MAR-92	Magnesium	6370	mg/kg	0-5.5	BEJ P
#37	PAD-A	16-MAR-92	Magnesium	9430	mg/kg	0-4	BEJ P
#38	PAD-A	16-MAR-92	Magnesium	7580	mg/kg	0-9	BEJ P
#38	PAD-A	16-MAR-92	Magnesium	8440	mg/kg	0-9	BEJ P
#4	PAD-A	18-MAR-92	Magnesium	9510	mg/kg	0-2.5	P
#5	PAD-A	18-MAR-92	Magnesium	9740	mg/kg	0-1.5	P
#5	PAD-A	18-MAR-92	Magnesium	11100	mg/kg	0-1.5	P
#6	PAD-A	19-MAR-92	Magnesium	7740	mg/kg	0-3	P
#7	PAD-A	19-MAR-92	Magnesium	8540	mg/kg	0-6	P
#8	PAD-A	17-MAR-92	Magnesium	6760	mg/kg	0-3	BEJ P
#9	PAD-A	18-MAR-92	Magnesium	11200	mg/kg	0-3	P
M10S	MW	03-JUN-92	Magnesium	6140	MG/KG	240-245	P
M10S	MW	03-JUN-92	Magnesium	5640	MG/KG	245-247	P
M1S	MW	03-JUN-92	Magnesium	11900	MG/KG	223-225	P

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
M1S	MW	03-JUN-92	Magnesium	11700	MG/KG	225-226	P
PEN. 1	SDA PIT 9	28-NOV-90	Magnesium	10500	MG/KG	20-22	P
PEN. 1	SDA PIT 9	28-NOV-90	Magnesium	9700	MG/KG	0-2	P
PEN. 1	SDA PIT 9	28-NOV-90	Magnesium	4020	MG/KG	8-10	P
PEN. 2	SDA PIT 9	26-NOV-90	Magnesium	7500	MG/KG	0-2	E P
PEN. 2	SDA PIT 9	26-NOV-90	Magnesium	2740	MG/KG	8-10	E P
PEN. 2	SDA PIT 9	26-NOV-90	Magnesium	9740	MG/KG	16-16.9	E P
PEN. 3	SDA PIT 9	15-NOV-90	Magnesium	8240	MG/KG	0-2	P
PEN. 3	SDA PIT 9	15-NOV-90	Magnesium	6760	MG/KG	4-6	P
PEN. 3	SDA PIT 9	15-NOV-90	Magnesium	11000	MG/KG	8-9.9	P
PEN. 4	SDA PIT 9	29-NOV-90	Magnesium	11800	MG/KG	16-18	P
PEN. 4	SDA PIT 9	29-NOV-90	Magnesium	7500	MG/KG	8-10	P
PEN. 4	SDA PIT 9	29-NOV-90	Magnesium	9150	MG/KG	0-2	P
PEN. 5	SDA PIT 9	21-NOV-90	Magnesium	9950	MG/KG	0-2	P
PEN. 5	SDA PIT 9	21-NOV-90	Magnesium	9860	MG/KG	20-20.8	P
PEN. 5	SDA PIT 9	21-NOV-90	Magnesium	9460	MG/KG	6-8	P
PEN. 6	SDA PIT 9	19-NOV-90	Magnesium	7740	MG/KG	4-6	P
PEN. 6	SDA PIT 9	19-NOV-90	Magnesium	7520	MG/KG	0-2	P
PEN. 7	SDA PIT 9	20-NOV-90	Magnesium	7820	MG/KG	0-2	P
PEN. 7	SDA PIT 9	21-NOV-90	Magnesium	4490	MG/KG	8-10	P
PEN. 7	SDA PIT 9	21-NOV-90	Magnesium	8740	MG/KG	14-15.4	P
PEN. 8	SDA PIT 9	27-NOV-90	Magnesium	9020	MG/KG	0-2	E P
PEN. 8	SDA PIT 9	27-NOV-90	Magnesium	3420	MG/KG	8-10	E P
PEN. 8	SDA PIT 9	27-NOV-90	Magnesium	9620	MG/KG	14-15	E P
PEN. 8	SDA PIT 9	27-NOV-90	Magnesium	9660	MG/KG	14-15	E P
#1	PAD-A	23-MAR-92	Mercury	.05	mg/kg	0-5	U CV
#10	PAD-A	18-MAR-92	Mercury	.05	mg/kg	0-5	U CV

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
#11	PAD-A	23-MAR-92	Mercury	.05	mg/kg	0-7	U CV
#12	PAD-A	17-MAR-92	Mercury	.05	mg/kg	0-4	U CV
#13	PAD-A	23-MAR-92	Mercury	.05	mg/kg	0-4	U CV
#14	PAD-A	19-MAR-92	Mercury	.05	mg/kg	0-9	U CV
#15	PAD-A	19-MAR-92	Mercury	.05	mg/kg	0-2	U CV
#16	PAD-A	17-MAR-92	Mercury	.05	mg/kg	0-4	U CV
#17	PAD-A	19-MAR-92	Mercury	.05	mg/kg	0-6	U CV
#18	PAD-A	19-MAR-92	Mercury	.05	mg/kg	0-3.5	U CV
#19	PAD-A	17-MAR-92	Mercury	.06	mg/kg	0-3	U CV
#2	PAD-A	19-MAR-92	Mercury	.05	mg/kg	0-4.5	U CV
#20	PAD-A	19-MAR-92	Mercury	.05	mg/kg	0-7	U CV
#21	PAD-A	19-MAR-92	Mercury	.05	mg/kg	0-7	U CV
#22	PAD-A	17-MAR-92	Mercury	.05	mg/kg	0-7	U CV
#23	PAD-A	19-MAR-92	Mercury	.05	mg/kg	0-2.5	U CV
#24	PAD-A	19-MAR-92	Mercury	.05	mg/kg	0-3	U CV
#25	PAD-A	18-MAR-92	Mercury	.05	mg/kg	0-3.5	U CV
#25	PAD-A	18-MAR-92	Mercury	.05	mg/kg	0-3.5	U CV
#26	PAD-A	18-MAR-92	Mercury	.05	mg/kg	0-5	U CV
#27	PAD-A	17-MAR-92	Mercury	.05	mg/kg	0-3	U CV
#28	PAD-A	18-MAR-92	Mercury	.05	mg/kg	0-4	U CV
#29	PAD-A	18-MAR-92	Mercury	.05	mg/kg	0-4	U CV
#3	PAD-A	23-MAR-92	Mercury	.05	mg/kg	0-4.5	U CV
#30	PAD-A	18-MAR-92	Mercury	.05	mg/kg	0-6	U CV
#31	PAD-A	18-MAR-92	Mercury	.05	mg/kg	0-1	U CV
#32	PAD-A	17-MAR-92	Mercury	.06	mg/kg	0-5	U CV
#33	PAD-A	16-MAR-92	Mercury	.05	mg/kg	0-8	U CV
#34	PAD-A	16-MAR-92	Mercury	.05	mg/kg	0-7	U CV

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
#35	PAD-A	16-MAR-92	Mercury	.05	mg/kg	0-4.5	U CV
#36	PAD-A	16-MAR-92	Mercury	.05	mg/kg	0-5.5	U CV
#37	PAD-A	16-MAR-92	Mercury	.06	mg/kg	0-4	U CV
#38	PAD-A	16-MAR-92	Mercury	.05	mg/kg	0-9	U CV
#38	PAD-A	16-MAR-92	Mercury	.05	mg/kg	0-9	U CV
#4	PAD-A	18-MAR-92	Mercury	.05	mg/kg	0-2.5	U CV
#5	PAD-A	18-MAR-92	Mercury	.05	mg/kg	0-1.5	U CV
#5	PAD-A	18-MAR-92	Mercury	.05	mg/kg	0-1.5	U CV
#6	PAD-A	19-MAR-92	Mercury	.05	mg/kg	0-3	U CV
#7	PAD-A	19-MAR-92	Mercury	.04	mg/kg	0-6	U CV
#8	PAD-A	17-MAR-92	Mercury	.75	mg/kg	0-3	CV
#9	PAD-A	18-MAR-92	Mercury	.11	mg/kg	0-3	CV
76-1	FRACT BASALT	25-MAY-93	Mercury	.05	mg/kg	109-110	U CV
76-1	RUBBLE ZONE	25-MAY-93	Mercury	.05	mg/kg	204.9-205.9	U CV
76-2	RUBBLE ZONE	25-MAY-93	Mercury	.05	mg/kg	78-79	U CV
76-2	FRACT BASALT	25-MAY-93	Mercury	.05	mg/kg	147-148	U CV
76-2	MASS BASALT	25-MAY-93	Mercury	.05	mg/kg	87-88	U CV
76-2	FRACT BASALT	25-MAY-93	Mercury	.05	mg/kg	220.8-222	U CV
76-3	SED INTBED	25-MAY-93	Mercury	.05	mg/kg	25.8-27.7	U CV
76-3	MASS BASALT	25-MAY-93	Mercury	.05	mg/kg	215-215.8	U CV
76-3	FRACT BASALT	25-MAY-93	Mercury	.05	mg/kg	94-95	U CV
76-4	SED INTBED	25-MAY-93	Mercury	.05	mg/kg	20.5-23	U CV
76-4	SED INTBED	25-MAY-93	Mercury	.06	mg/kg	98.6-101.1	U CV
76-4A	SED INTBED	25-MAY-93	Mercury	.05	mg/kg	97.8-100.2	U CV
76-4A	SED INTBED	25-MAY-93	Mercury	.05	mg/kg	223.3-224.7	U CV
76-4A	FRACT BASALT	25-MAY-93	Mercury	.05	mg/kg	45-45.8	U CV
76-5	MASS BASALT	25-MAY-93	Mercury	.05	mg/kg	45.1-46	U CV

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
76-5	FRACT BASALT	25-MAY-93	Mercury	.05	mg/kg	48-49	U CV
77-2	RUBBLE ZONE	25-MAY-93	Mercury	.05	mg/kg	25.5-26	U CV
77-2	FRACT BASALT	25-MAY-93	Mercury	.05	mg/kg	72.6-73.5	U CV
77-2	FRACT BASALT	25-MAY-93	Mercury	.05	mg/kg	199.5-200.3	U CV
78-1	RUBBLE ZONE	25-MAY-93	Mercury	.05	mg/kg	23.6-24.5	U CV
78-1	RUBBLE ZONE	25-MAY-93	Mercury	.05	mg/kg	66-66.5	U CV
78-2	RUBBLE ZONE	25-MAY-93	Mercury	.05	mg/kg	32.8-33.4	U CV
78-2	SED INTBED	25-MAY-93	Mercury	.05	mg/kg	226.3-230.1	U CV
78-2	RUBBLE ZONE	25-MAY-93	Mercury	.05	mg/kg	126.5-127.8	U CV
78-3	RUBBLE ZONE	25-MAY-93	Mercury	.05	mg/kg	56.5-57.7	U CV
78-3	MASS BASALT	25-MAY-93	Mercury	.05	mg/kg	122.4-123.3	U CV
78-3	RUBBLE ZONE	25-MAY-93	Mercury	.05	mg/kg	198.7-199.7	U CV
78-5	RUBBLE ZONE	25-MAY-93	Mercury	.05	mg/kg	65.5-66.8	U CV
78-5	RUBBLE ZONE	25-MAY-93	Mercury	.05	mg/kg	130.6-132	U CV
78-5	MASS BASALT	25-MAY-93	Mercury	.05	mg/kg	172.9-173.7	U CV
78-5	FRACT BASALT	26-MAY-93	Mercury	.05	mg/kg	220.3-224.7	U CV
79-2	FRACT BASALT	26-MAY-93	Mercury	.05	mg/kg	27-29	U CV
79-2	FRACT BASALT	26-MAY-93	Mercury	.05	mg/kg	70-70.6	U CV
79-2	MASS BASALT	26-MAY-93	Mercury	.07	mg/kg	221.5-222.5	B CV
79-3	RUBBLE ZONE	26-MAY-93	Mercury	.05	mg/kg	53.9-55	U CV
79-3	FRACT BASALT	26-MAY-93	Mercury	.05	mg/kg	100.6-101.8	U CV
8801D	RUBBLE ZONE	25-MAY-93	Mercury	.05	mg/kg	43.2-44.7	U CV
8801D	FRACT BASALT	25-MAY-93	Mercury	.05	mg/kg	87-89	U CV
8801D	FRACT BASALT	25-MAY-93	Mercury	.05	mg/kg	170.3-171.3	U CV
8802D	RUBBLE ZONE	25-MAY-93	Mercury	.06	mg/kg	95-96	U CV
8901D	SED INTBED	25-MAY-93	Mercury	.06	mg/kg	238.1-239.3	U CV
8901D	SED INTBED	25-MAY-93	Mercury	.06	mg/kg	243.1-245.2	U CV

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
D-10	RUBBLE ZONE	25-MAY-93	Mercury	.05	mg/kg	152-153	U CV
D-10	FRACT BASALT	25-MAY-93	Mercury	.06	mg/kg	220-221.5	U CV
D-10	RUBBLE ZONE	25-MAY-93	Mercury	.06	mg/kg	194-196	U CV
M10S 240	MW	03-JUN-92	Mercury	.05	MG/KG	240-245	U CV
M10S 240	MW	03-JUN-92	Mercury	.05	MG/KG	245-247	U CV
M1S 240	MW	03-JUN-92	Mercury	.06	MG/KG	223-225	B CV
M1S 240	MW	03-JUN-92	Mercury	.06	MG/KG	225-226	U CV
PEN. 1	SDA PIT 9	28-NOV-90	Mercury	.1	MG/KG	20-22	U CV
PEN. 1	SDA PIT 9	28-NOV-90	Mercury	.1	MG/KG	8-10	U CV
PEN. 1	SDA PIT 9	28-NOV-90	Mercury	.1	MG/KG	0-2	U CV
PEN. 2	SDA PIT 9	26-NOV-90	Mercury	.1	MG/KG	0-2	U CV
PEN. 2	SDA PIT 9	26-NOV-90	Mercury	.1	MG/KG	16-16.9	U CV
PEN. 2	SDA PIT 9	26-NOV-90	Mercury	.1	MG/KG	8-10	U CV
PEN. 3	SDA PIT 9	15-NOV-90	Mercury	.1	MG/KG	0-2	U CV
PEN. 3	SDA PIT 9	15-NOV-90	Mercury	.1	MG/KG	4-6	U CV
PEN. 3	SDA PIT 9	15-NOV-90	Mercury	.1	MG/KG	8-9.9	U CV
PEN. 4	SDA PIT 9	29-NOV-90	Mercury	.1	MG/KG	16-18	U CV
PEN. 4	SDA PIT 9	29-NOV-90	Mercury	.1	MG/KG	0-2	U CV
PEN. 4	SDA PIT 9	29-NOV-90	Mercury	.1	MG/KG	8-10	U CV
PEN. 5	SDA PIT 9	21-NOV-90	Mercury	.1	MG/KG	0-2	UN CV
PEN. 5	SDA PIT 9	21-NOV-90	Mercury	.1	MG/KG	6-8	UN CV
PEN. 5	SDA PIT 9	21-NOV-90	Mercury	.1	MG/KG	20-20.8	UN CV
PEN. 6	SDA PIT 9	19-NOV-90	Mercury	.1	MG/KG	4-6	UN CV
PEN. 6	SDA PIT 9	19-NOV-90	Mercury	.1	MG/KG	0-2	UN CV
PEN. 7	SDA PIT 9	20-NOV-90	Mercury	.1	MG/KG	0-2	UN CV
PEN. 7	SDA PIT 9	21-NOV-90	Mercury	.1	MG/KG	8-10	UN CV
PEN. 7	SDA PIT 9	21-NOV-90	Mercury	.1	MG/KG	14-15.4	UN CV

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
PEN. 8	SDA PIT 9	27-NOV-90	Mercury	.1	MG/KG	0-2	U CV
PEN. 8	SDA PIT 9	27-NOV-90	Mercury	.1	MG/KG	14-15	U CV
PEN. 8	SDA PIT 9	27-NOV-90	Mercury	.1	MG/KG	14-15	U CV
PEN. 8	SDA PIT 9	27-NOV-90	Mercury	.1	MG/KG	8-10	U CV
GS-91	FRACT BASALT	26-MAY-93	Mercury	.05	mg/kg	23.4-25	U CV
GS-91	RUBBLE ZONE	26-MAY-93	Mercury	.05	mg/kg	106-108	U CV
GS-93	FRACT BASALT	26-MAY-93	Mercury	.05	mg/kg	14-16	U CV
GS-93	FRACT BASALT	26-MAY-93	Mercury	.05	mg/kg	222.5-236	U CV
GS-94	FRACT BASALT	26-MAY-93	Mercury	.05	mg/kg	116.3-118	U CV
GS-94	FRACT BASALT	26-MAY-93	Mercury	.05	mg/kg	217-220.2	U CV
GS-94	FRACT BASALT	26-MAY-93	Mercury	.05	mg/kg	26.1-28	U CV
GS-95	FRACT BASALT	26-MAY-93	Mercury	.05	mg/kg	76-114.4	U CV
GS-95	FRACT BASALT	26-MAY-93	Mercury	.05	mg/kg	235.2-239	U CV
76-1	FRACT BASALT	25-MAY-93	Nitrate	.1	mg/kg	109-110	U
76-1	RUBBLE ZONE	25-MAY-93	Nitrate	1.02	mg/kg	204.9-205.9	
76-2	RUBBLE ZONE	25-MAY-93	Nitrate	1.01	mg/kg	78-79	
76-2	FRACT BASALT	25-MAY-93	Nitrate	.1	mg/kg	147-148	U
76-2	FRACT BASALT	25-MAY-93	Nitrate	.1	mg/kg	220.8-221.5	U
76-2	MASS BASALT	25-MAY-93	Nitrate	.1	mg/kg	87-88	U
76-3	SED INTBED	25-MAY-93	Nitrate	.1	mg/kg	25.8-27.7	U
76-3	FRACT BASALT	25-MAY-93	Nitrate	.23	mg/kg	94-95	
76-3	MASS BASALT	25-MAY-93	Nitrate	.22	mg/kg	215-215.8	
76-4	SED INTBED	25-MAY-93	Nitrate	.1	mg/kg	20.5-23	U
76-4	SED INTBED	25-MAY-93	Nitrate	.12	mg/kg	98.6-101.1	U
76-4A	SED INTBED	25-MAY-93	Nitrate	.1	mg/kg	97.8-100.2	U
76-4A	FRACT BASALT	25-MAY-93	Nitrate	.2	mg/kg	45-45.8	U
76-4A	SED INTBED	25-MAY-93	Nitrate	.1	mg/kg	223.3-224.7	U

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
76-5	MASS BASALT	25-MAY-93	Nitrate	.29	mg/kg	45.1-46	
76-5	FRACT BASALT	25-MAY-93	Nitrate	.53	mg/kg	48-49	
77-2	RUBBLE ZONE	25-MAY-93	Nitrate	.2	mg/kg	25.5-26	U
77-2	FRACT BASALT	25-MAY-93	Nitrate	.47	mg/kg	72.6-73.5	
77-2	FRACT BASALT	25-MAY-93	Nitrate	.57	mg/kg	199.5-200.3	
78-1	RUBBLE ZONE	25-MAY-93	Nitrate	.2	mg/kg	23.6-24.5	U
78-1	RUBBLE ZONE	25-MAY-93	Nitrate	.2	mg/kg	66-66.8	U
78-2	RUBBLE ZONE	25-MAY-93	Nitrate	.2	mg/kg	32.8-33.4	U
78-2	SED INTBED	25-MAY-93	Nitrate	.38	mg/kg	226.3-230.1	
78-2	RUBBLE ZONE	25-MAY-93	Nitrate	.24	mg/kg	126.5-127.8	
78-3	RUBBLE ZONE	25-MAY-93	Nitrate	.2	mg/kg	56.5-57.7	U
78-3	MASS BASALT	25-MAY-93	Nitrate	.2	mg/kg	122.4-123.3	U
78-3	RUBBLE ZONE	25-MAY-93	Nitrate	.2	mg/kg	198.7-199.7	U
78-5	RUBBLE ZONE	25-MAY-93	Nitrate	.2	mg/kg	65.5-66.8	U
78-5	RUBBLE ZONE	25-MAY-93	Nitrate	.34	mg/kg	130.6-132	
78-5	MASS BASALT	25-MAY-93	Nitrate	.25	mg/kg	172.9-173.7	
78-5	FRACT BASALT	26-MAY-93	Nitrate	.2	mg/kg	220.3-224.7	U
79-2	FRACT BASALT	26-MAY-93	Nitrate	.38	mg/kg	27-29	
79-2	MASS BASALT	26-MAY-93	Nitrate	.33	mg/kg	221.5-222.5	
79-2	FRACT BASALT	26-MAY-93	Nitrate	.37	mg/kg	70-70.6	
79-3	RUBBLE ZONE	26-MAY-93	Nitrate	.23	mg/kg	53.9-55	
79-3	FRACT BASALT	26-MAY-93	Nitrate	.26	mg/kg	100.6-101.8	
8801D	RUBBLE ZONE	25-MAY-93	Nitrate	.91	mg/kg	43.2-44.7	
8801D	FRACT BASALT	25-MAY-93	Nitrate	2.94	mg/kg	170.3-171.3	
8801D	FRACT BASALT	25-MAY-93	Nitrate	.91	mg/kg	87-89	
8802D	RUBBLE ZONE	25-MAY-93	Nitrate	.12	mg/kg	95-96	U
8901D	SED INTBED	25-MAY-93	Nitrate	.13	mg/kg	238.1-239.3	U

Table 8: ERIS Soil and Basalt Sample Inorganic Concentrations

Location	Type	Date	Compound	Conc.	Units	Depth	Q Flags
8901D	SED INTBED	25-MAY-93	Nitrate	.12	mg/kg	243.1-245.2	U
D-10	RUBBLE ZONE	25-MAY-93	Nitrate	.1	mg/kg	152-153	U
D-10	FRACT BASALT	25-MAY-93	Nitrate	.1	mg/kg	220-221.5	U
D-10	RUBBLE ZONE	25-MAY-93	Nitrate	.11	mg/kg	194-196	U
SAREA 1	SPR AREA B	11-AUG-94	Nitrate	4	mg/kg	0-0.5	
SAREA 1	SPR AREA B	11-AUG-94	Nitrate	4.6	mg/kg	0-0.5	
SAREA 2	SPR AREA B	11-AUG-94	Nitrate	6.5	mg/kg	0-0.5	
SAREA 2	SPR AREA B	11-AUG-94	Nitrate	6	mg/kg	0-0.5	
SAREA 3	SPR AREA B	31-AUG-94	Nitrate	3.1	mg/kg	0-1	
SAREA 3	SPR AREA B	31-AUG-94	Nitrate	2.8	mg/kg	0-1	
GS-91	FRACT BASALT	26-MAY-93	Nitrate	1.96	mg/kg	23.4-25	
GS-91	RUBBLE ZONE	26-MAY-93	Nitrate	1.86	mg/kg	106-108	
GS-93	FRACT BASALT	26-MAY-93	Nitrate	.57	mg/kg	14-16	
GS-93	FRACT BASALT	26-MAY-93	Nitrate	.75	mg/kg	222.5-236	
GS-94	FRACT BASALT	26-MAY-93	Nitrate	.2	mg/kg	116.3-118	U
GS-94	FRACT BASALT	26-MAY-93	Nitrate	.21	mg/kg	26.1-28	
GS-94	FRACT BASALT	26-MAY-93	Nitrate	.2	mg/kg	217-220.2	U
GS-95	FRACT BASALT	26-MAY-93	Nitrate	.29	mg/kg	76-114.4	
GS-95	FRACT BASALT	26-MAY-93	Nitrate	.25	mg/kg	235.2-239	